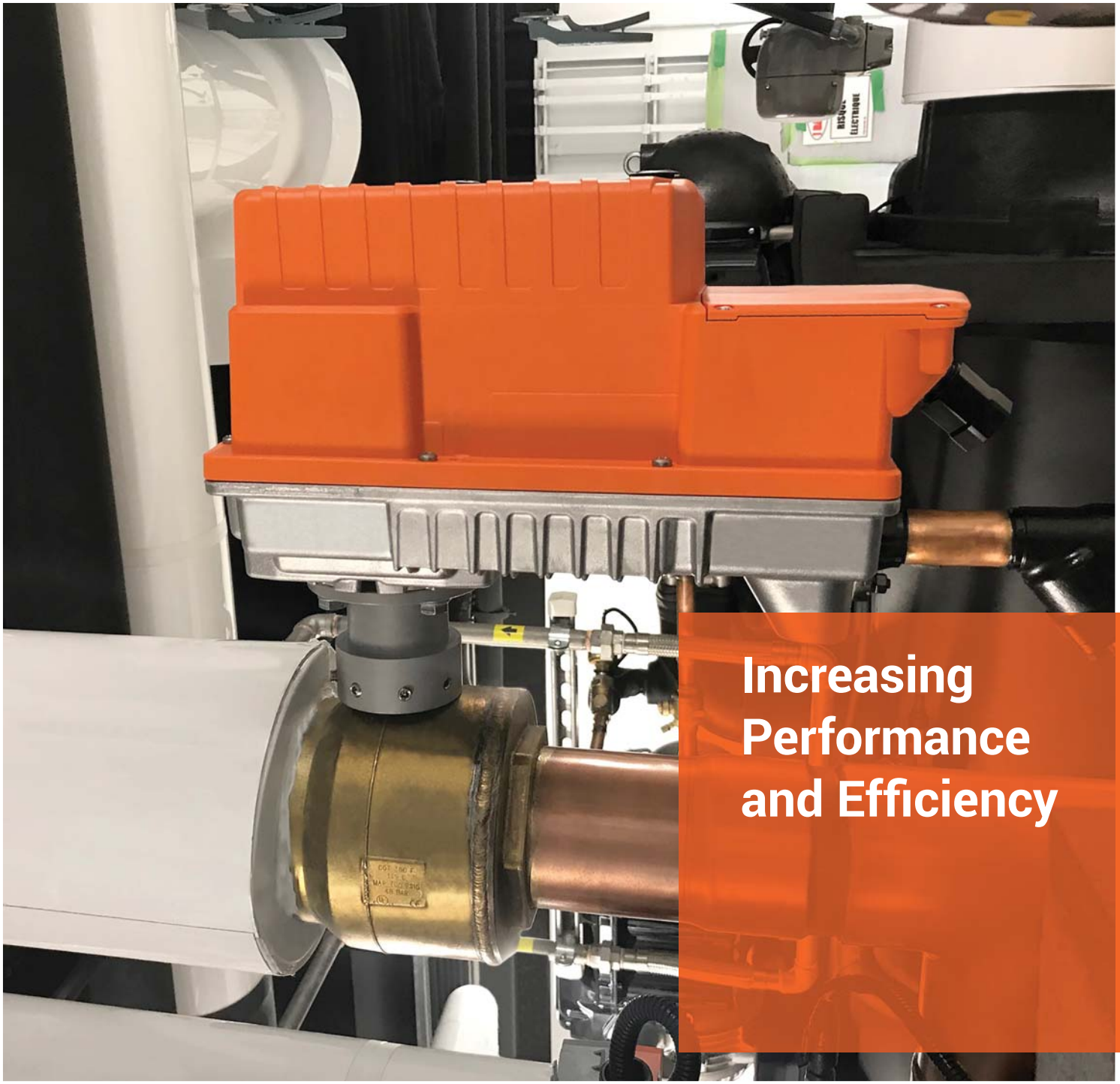


Increasing Performance and Efficiency

Retrofit Solutions

EFFECTIVE JULY 2018

RETROFIT®

BELIMO®

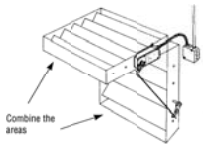
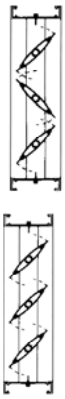
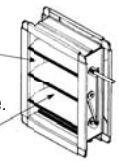
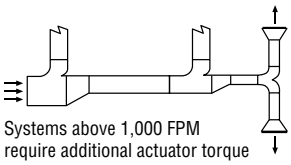
Table of Contents

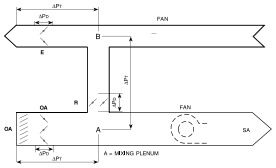
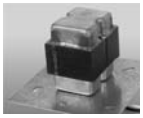
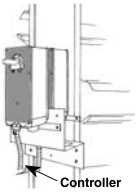
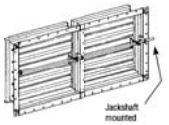
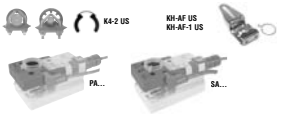
Actuator Retrofit Solutions

Belimo HVAC damper actuator retrofits are designed to replace failed or non-functioning actuators used in a wide variety of on/off, modulating or communicating damper applications. With a comprehensive torque range (18 in-lbs to 1,400 in-lbs), and the ability to direct mount on standard damper shafts or jackshafts, these actuator solutions are ideal for air handlers, economizer units, VAV terminal units, fan coil units, and unit ventilators.

5 YEAR WARRANTY

The “10 questions” method for sizing and selection shown below is recommended as the best method for your actuation requirements. Use the “Application Data” column in this chart as a worksheet to help in the selection process.

APPLICATION INFO		APPLICATION DATA
1 What is the total area of the damper?		_____ **sq.ft.**
2 Opposed blade or Parallel blade control construction?	L” x W” = Total sq inches/144 = total sq feet **Opposed Blade w/o seals 3 in-lbs/sq feet*** **Opposed Blade w/ seals 5 in-lbs/sq feet** **Parallel Blade w/o seals 4 in-lbs/sq feet** **Parallel Blade w/ seals 7 in-lbs/sq feet** ***Less than 1,000 feet per minute** 	❑ **Opposed Blade** ❑ **Parallel Blade**
3 Are there blade and edge seals on the damper?	This will impact the proper selection as the seals add resistance requiring more torque. If unknown, use a worst case scenario, parallel blade with seals. 	❑ **Yes** ❑ **No**
4 For the damper in question, what does the manufacturer specify as the torque rating?	 If this information is not available refer to the “typical damper requirements and sizing” chart below.	_____ **in-lbs/sq.ft.**
5 What is the air velocity, static pressure, or design CFM?	 Systems above 1,000 FPM require additional actuator torque	_____**W.G.** _____**CFM** _____**FPM**

ACTUATOR REQUIREMENTS		APPLICATION DATA
6 Is fail-safe actuation required?	 Consider the application. Is the actuator and/or damper exposed to outside air? If yes, use spring return.	❑ **Yes** ❑ **No**
7 What is the supply voltage to the actuator? • 24 VAC/DC • 120 VAC • 230 VAC single phase	Do you need a step down transformer?  If replacing an oil immersed gear train actuator, is the transformer in the defective actuator? You may need to purchase one.	❑ **24 VAC** ❑ **120 VAC** ❑ **230 VAC**
8 What is the control signal to the actuator?	 • 2 position • Floating point • Modulating • Sequencing • “Non-standard” voltage signals This will be a critical component to the selection of an actuator. Consider the …MFT actuator product range and the flexibility of its application.	❑ **On/Off** ❑ **Floating Point** ❑ **2-10 VDC** ❑ **0-10 VDC** ❑ **4-20 mA** ❑ **PWM____ range** ❑ **Other (MFT)**
9 Can you direct couple to a damper shaft?	 Direct-coupling has become the industry standard. Some retrofit applications do not allow direct coupling. Refer to the Belimo “Mounting & Methods Guide” for application details.	❑ **Yes** ❑ **No, see accessories page**
10 Are there additional accessories required?	 For example, some applications require the addition of an auxiliary switch for proof of position; a retrofit application may require an additional mounting bracket and linkage kit. We advise that you identify these needs prior to leaving the job site or ordering products.	❑ **No** ❑ **Yes, see accessories section or actuator series for details**

TYPICAL DAMPER REQUIREMENTS AND SIZING

Square Damper (with square shape): ft² = h x w /144; (h= height, w= width, in inches)

EXAMPLE: Damper Area (8 ft²) x Rated Torque Loading of Damper (4 in-lbs/ft²) = Total in-lbs Required (32 in-lbs) **Belimo LF 35 in-lbs/ LM 45 in-lbs actuators**

		Torque Loading in-lbs/ft²		
	Damper Blade Type	**< 1000 FPM**	**1000-2500 FPM**	**2500-3500 FPM**
SQUARE	Parallel blade/edge seals	**7 (Typical)**	10.5	14
	Opposed blade/edge seals	**5 (Typical)**	7.5	10
	Parallel blade/no edge seals	4	6	8
	Opposed blade/no edge seals	3	4.5	6
	Round	10	14	20

TYPICAL DAMPER REQUIREMENTS AND SIZING EXAMPLE:

APPLICATION REQUIREMENTS	SQUARE DAMPER	ROUND DAMPER
Damper Length	24”	
Damper Width	12”	
Damper (Round)		12”
Blade Type	Opposed	Round
Edge Seals	Edge Seals	
Design CFM	1800 CFM	700 CFM
Fail-Safe	Yes	Yes
Supply Voltage	24 Volt	24 Volt
Control Signal	2-10 VDC	2-10 VDC
CALCULATIONS		
Damper Area (sq inches)	24” x 12” = 288 in^2	πr^2 =113.04 in^2
Damper Area (sq feet)*	288 in^2 x 1ft/12 in x 1ft/12 in = 2 ft^2	113.04 in^2 / 1ft/12in x 1ft/12in= 0.785 ft^2
Velocity	1800 ft^3/min / 2 ft^2 = 900 ft/min	700 ft^3/min / .785 ft^2 = 892 ft/min
	See chart under <1000 FPM (ft/min)	See chart under <1000 FPM (ft/min)
Rated Torque Loading (in-lbs/ft^2)**	Select 5 in-lbs/ft^2 for Opposed Blade/Edge Seals	Select 10 in-lbs/ft^2 for Round Damper
EXAMPLE EQUATION	***Damper Area (sq ft) x **Rated Torque Loading of Damper (in-lbs/ft^2) = Total in-lbs Required**	
	2 ft^2 x 5 in-lbs/ft^2 = 10 in-lbs Belimo LF24-SR US @ 35 in-lbs	0.785 ft^2 x 10 in-lbs/ft^2 = 7.85 in-lbs Belimo LF24-SR US @ 35 in-lbs

CONTROL SIGNAL OVERVIEW

Belimo actuators are compatible with many control inputs and all direct digital control (DDC) systems. There are many signals to select from with today’s controllers.

On/Off or Open-Close: The actuator is able to drive either to its full clockwise (CW) position, or to its full counter-clockwise (CCW) position. The same indication is used for spring return type actuators. Where the actuator will drive to its full CW position and spring return to its CCW position. This can also be reversed.

3-point, Tri-State, Floating Point: The actuator has both clockwise (CW) and counter-clockwise (CCW) control inputs. One drives the actuator to its CW, the other to its CCW position. If there is no signal (Null point) on either input the actuator simply stays in its last position.

Proportional Control: The actuator drives proportional to its control input and modulates throughout its angle of rotation. This control type is usually a variation of VDC. Common values are:

0-10 VDC 2-10 VDC

It is common to also have a 0-20/4-20 mA output from a controller. This can be very easily converted to 0-10 VDC or 2-10 VDC with a 500 Ω resistor.

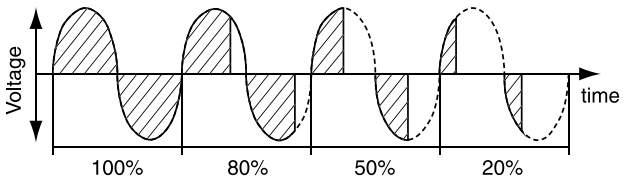
Pulse Width Modulation (PWM): The actuator drives to a specified position according to a pulse duration, the “length” of signal. The pulse can originate from a dry contact closure or a triac sink or source controller. An example of PWM control:

Time base: 0 to 10 seconds

Output pulse: 5 seconds

Actuator position: 50%

Phasecut: An actuator drives depending on the power result of a remaining wave. This signal type cuts the amplitude of the wave and the actuator recognizes this signal as a proportional movement.



Multi-Functional Technology (MFT): This technology was developed by Belimo for incorporation into our damper and valve actuators. MFT provides the ability to program certain characteristics of the actuators. Some of the key characteristics to change are:

CONTROL INPUT
Selectable on/off, VDC, PWM or floating point

MOTION VALUES
Selectable running time adjustment

FEEDBACK
Selectable feedback values

Discontinued Belimo to Belimo

Actuator Replacement Cross Reference

SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
AF120 US	AFBUP
AF120-S US	AFBUP-S
AF230 US	AFBUP
AF230-S US	AFBUP-S
AF24 US	AFB24
AF24-3 US	AFX24-MFT + F ❑ ❑
AF24-3-S US	AFX24-MFT-S + F ❑ ❑
AF24-MFT US	AFB24-MFT
AF24-MFT95 US	AFB24-MFT95
AF24-MFT-S US	AFB24-MFT-S
AF24-PC US	AFB24-PC
AF24-PWM US	AFX24-MFT + W ❑ ❑
AF24-S US	AFB24-S
AF24-SR US	AFB24-SR**
AF24-SR US*	AFB24-PC if phasecut is needed
AF24-SR95 US	AFB24-MFT95
AF24-SR-S US	AFB24-SR-S**
AFA24-SR US**	AFB24-SR**
AFR120 US	AFBUP
AFR120-S US	AFBUP-S
AFR24 US	AFB24
AFR24-3 US	AFX24-MFT + F ❑ ❑
AFR24-3-S US	AFX24-MFT-S + F ❑ ❑
AFR24-S US	AFB24-S
AFR24-SR US	AFB24-SR**
FM24 US	AFB24
FM24-SR US	AFB24-SR
FM24-SR90 US	AFB24-MFT95
FM24-SR95 US	AFB24-MFT95
FS24	AFB24
FS24-S	AFB24-S
FSAF120 US	FSAF120A
FSAF120-S US	FSAF120A-S
FSAF230 US	FSAF230A
FSAF230-S US	FSAF230A-S
FSAF24 US	FSAF24A
FSAF24-BAL US	FSAFB24-SR + SGA24 or SGF24
FSAF24-BAL-S US	FSAFB24-SR-S + SGA24 or SGF24
FSAF24-S US	FSAF24A-S
FSAF24-SR US	FSAFB24-SR
FSAF24-SR-S US	FSAFB24-SR-S
LF24-SR-MP US	LF24-MFT-20 US
LF24-SR-S-MP US	LF24-MFT-S-20 US
NF120 US	NFBUP
NF120-S US	NFBUP-S
NF230 US	NFBUP
NF230-S US	NFBUP-S
NF24 US	NFB24
NF24-MFT US	NFB24-MFT
NF24-S US	NFB24-S
NF24-S2 US	NFB24-S
NF24-SR US	NFB24-SR
NF24-SR-S US	NFB24-SR-S
SF120 US	AFBUP
SF120-S US	AFBUP-S
SF24 US	AFB24
SF24-S US	AFB24-S
TF120 US	TFB120
TF120-S US	TFB120-S
TF24 US	TFB24
TF24-3 US	TFB24-3
TF24-3-S US	TFB24-3-S
TF24-MFT US	TFB24-MFT
TF24-MFT-S US	TFB24-MFT-S
TF24-S US	TFB24-S
TF24-SR US	TFB24-SR
TF24-SR-S US	TFB24-SR-S
TFC120-S US	TFCB120-S

* Purchased before May 2003.

** Not piggy back capable.

NON FAIL-SAFE ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
AM24 US	AMB24-3
AM24-MFT 95 US	AMX24-MFT95 + # AM0L0 1C1 R01
AM24-MFT US	AMX24-MFT + # AM100 1C1 ❑ ❑ ❑
AM24-PC US	AMX24-PC + # AM0N0 1C1 ❑ ❑ ❑
AM24-PWM-A US	AMX24-MFT + # AM100 1C1 W02
AM24-PWM-B US	AMX24-MFT + # AM100 1C1 W03
AM24-PWM-C US	AMX24-MFT + # AM100 1C1 W01
AM24-S US	AMB24-3-S
AM24-SR US	AMB24-SR
AM24-SRS-A US	AMX24-MFT + # AM100 1C1 A04
AM24-SRS-B US	AMX24-MFT + # AM100 1C1 A05
AM24-SRS-C US	AMX24-MFT + # AM100 1C1 A06
GM24 US	GMB24-3
GM24-MFT US	GMX24-MFT+ # GM110 1C1 ❑ ❑ ❑
GM24-SR US	GMB24-SR
GM24-SR US	GMX24-PC if phasecut is needed
LM24 US	LMB24-3
LM24-3 US	LMB24-3
LM24-MFT US	LMX24-MFT + # LM100 1C1 ❑ ❑ ❑
LM24-MFT.1 US	LMX24-MFT+ # LM100 1C1 ❑ ❑ ❑
LM24-SR US	LMB24-SR
LM24-SR.1 US	LMB24-SR.1
LM24-SR-2.0 US	LMB24-SR
LM24-SR-T US	LMB24-SR-T
LM24-SR-T.1 US	LMB24-SR-T.1
LM24-SR-T-2.0 US	LMB24-SR-T
LMC24-SR US	LMCB24-SR
NM24 EU	NMB24-3
NM24 US	NMB24-3
NM24-1 US	NMB24-3
NM24-1/200 US	NMX24-3 + # NM00 1C3 000
NM24-1/300 US	NMX24-3 + # NM00 1C3 000
NM24-MFT US	NMX24-MFT + # NM100 1C1 ❑ ❑ ❑
NM24-MFT.1 US	NMX24-MFT + # NM100 1C1 ❑ ❑ ❑
NM24-PWM US	NMX24-MFT + # NM100 1C1 W ❑ ❑
NM24-SR US	NMB24-SR
NM24-SRS US	NMX24-MFT + # NM100 1C1 A ❑ ❑
NMQ24-MFT US	NMQX24-MFT + #NMQD00 1C1 ❑ ❑ ❑
NMV24-D US	NMV-D3-MFT
NMV24-V US	NMV-D3-MFT
SM24 US	AMB24-3
SM24-S US	AMX24-MFT + # AM110 1C1 ❑ ❑ ❑ + S1A/S2A
SM24-SR US	AMB24-SR
SM24-SR US	AMX24-PC if phasecut is needed
SM24-SR94 US	AMX24-MFT95 + # AM0L0 1C1 R01
SM24-SRS US	AMX24-MFT + # AM100 1C1 A ❑ ❑

* Purchased before May 2003. ** Not piggy back capable. ❑ Placeholder for custom options.

Discontinued Belimo to Belimo

Actuator Replacement Cross Reference

When replacing an actuator on a valve, whether Belimo or other manufacture, be sure to consider the application parameters. The new product may not be the best fit for the application. For example, an existing MAR actuator mounted to a valve linkage. The direct replacement of the actuator would be the PR series actuator. The MAR and the PR have different linkage construction. The linkage would also need to be replaced.

When retrofitting or replacing actuators, it is recommended to select the new product based on application parameters. This ensures the selected actuator is fit for the application.

Please consult Belimo for assistance with valve actuator replacement.

SPRING RETURN ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
AF24 US	AFRB24
AF24-SR US	AFRB24-SR
AF24-3 US	AFX24-MFT +F ❑ ❑
AF24-3-S US	AFX24-MFT-S + F ❑ ❑
AF24-PWM US	AFX24-MFT + W ❑ ❑
AF24-SR95 US	AFB24-MFT95
AF24-SR-S US	AFB24-SR-S
LF24-SR-MP US	LF24-MFT-20 US
LF24-SR-S-MP US	LF24-MFT-S-20 US
NVF24-MFT US	SVKX24-MFT* or SVKB24-SR*
NVF24-MFT-E US	SVKX24-MFT* or SVKB24-SR*

*New linkage required.

NON FAIL-SAFE ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
LR24 US	LRB24-3
LR24/200 US*	LRX24-3 + # LR000 RC3 002
LR24/300 US	LRX24-3 + # LR000 RC3 002
LR24-1 US	LRB24-3
LR24-1/200 US*	LRX24-3 + # LR000 RC3 002
LR24-1/300 US	LRB24-3 + # LR000 RC3 002
LR24-3-1 US	LRB24-3
LR24-3-1/200 US*	LRX24-3 + # LR000 RC3 002
LR24-3-1/300 US	LRX24-3 + # LR000 RC3 002
LR24-MFT US	LRX24-MFT + # LR100 RC1 ❑ ❑ ❑
LR24-MFT/200 US*	LRX24-MFT + # LR100 RC3 ❑ ❑ ❑
LR24-MFT/300 US	LRX24-MFT + # LR100 RC3 ❑ ❑ ❑
LR24-SR/200 US*	LRX24-SR + # LR030 RC3 002
LR24-SR/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1 US	LRB24-SR
LR24-SR-1/200 US*	LRX24-SR + # LR030 RC3 002
LR24-SR-1/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-1-2.0 US	LRB24-SR
LR24-SR-1-2.0/200 US*	LRX24-SR + # LR030 RC3 002
LR24-SR-1-2.0/300 US	LRX24-SR + # LR030 RC3 002
LR24-SR-2.0 US	LRB24-SR
LR24-SR-2.0/200 US*	LRX24-SR + # LR030 RC3 002
LR24-SR-2.0/300 US	LRX24-SR + # LR030 RC3 002
LV24 US	CCV with LR...or TR...or Zonetight with CQ
LV24/200 US*	CCV with LR...or TR...or Zonetight with CQ
LV24/300 US	CCV with LR...or TR...or Zonetight with CQ
LV24-1 US	CCV with LR...or TR...or Zonetight with CQ
LV24-1/200 US*	CCV with LR...or TR...or Zonetight with CQ
LV24-1/300 US	CCV with LR...or TR...or Zonetight with CQ
LV24-3 US	CCV with LR...or TR...or Zonetight with CQ
LV24-3-1 US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR/200 US*	CCV with LR...or TR...or Zonetight with CQ
LV24-SR/300 US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1 US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1/200 US*	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1/300 US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1-2.0 US	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1-2.0/200 US*	CCV with LR...or TR...or Zonetight with CQ
LV24-SR-1-2.0/300 US	CCV with LR...or TR...or Zonetight with CQ

❑ Placeholder for custom options.
*These models had a 2m/6' long cable and the replacement is a 3m/10' long cable.
CV must be known for proper replacement.

NON FAIL-SAFE ACTUATORS

DISCONTINUED MODEL	REPLACEMENT MODEL
AM24 US	ARB24-3
AM24-MFT US	ARX24-MFT + # AR100 RC1 ❑ ❑ ❑
AM24-S US	ARB24-S US
NM24 US	ARB24-3
NM24-MFT US	ARX24-MFT + # AR100 RC1A ❑ ❑
NM24-SR US	ARX24-SR + # AR030 RC1 ❑ ❑ ❑
NM24-SRS US	ARX24-MFT + # AR100 RC1W ❑ ❑
NR24-3 US**	LRB24-3
NR24-SR US**	LRX24-MFT + # LR100 RC1 ❑ ❑ ❑
NV24-3 US	SVX24-3*
NV24-MFT US	SVX24-MFT* or SVB24-SR*
NVG24-MFT US	EVX24-MFT* or EVX24-3*

* New linkage required.
❑ Placeholder for custom options.
** Consider ambient temperature for application.

NON FAIL-SAFE – 24 VAC		NON FAIL-SAFE – 24 VAC	
DISCONTINUED MODEL	Torque (in-lbs)	REPLACEMENT MODEL	Torque (in-lbs)
MAR100B-24V	1,500	SY4-24*	3,560
MAR160-B-24V	2,000	SY4-24*	3,560
MAR100BP-24V	1,800	SY4-24MFT*	3,560
MAR160-BP-24V	2,500	SY4-24MFT*	3,560
MAR250-60-24V	5,000	SY5-24*	4,450
MAR250-60P-24V	5,000	SY5-24MFT*	4,450

*New linkage required.

NON FAIL-SAFE – 110 VAC		NON FAIL-SAFE – 110 VAC	
DISCONTINUED MODEL	Torque (in-lbs)	REPLACEMENT MODEL	Torque (in-lbs)
MAR100B	1,500	SY4-110*	3,559
MAR160B	2,000	SY4-110*	3,560
MAR100BP	1,800	SY4-120MFT*	3,560
MAR160-BP	2,500	SY4-120MFT*	3,560
MAR250-30	5,000	SY5-110*	4,450
MAR250-30P	5,000	SY6-110*	6,450
		SY6-120MFT*	6,450
MAR800-30	10,000	SY7-110*	9,790
MAR800-30P	10,000	SY8-110 *	13,350
		SY8-120MFT*	13,350
MAR1600-70	21,000	SY10-110*	22,250
MAR1600-70P	21,000	SY10-120MFT*	22,250
MAR4000-70	48,000	SY12-110*	31,150
MAR4000-70P	48,000	SY12-120MFT*	31,150

*New linkage required.

NON FAIL-SAFE – SY ACTUATORS		NON FAIL-SAFE - 24-240 VAC	
DISCONTINUED MODEL	Torque (in-lbs)	REPLACEMENT MODEL	Torque (in-lbs)
SY2-110*	800	PRBUP-3-T	1,400
SY3-110*	1,335	PRBUP-3-T	1,400
SY2-120MFT*	800	PRBUP-MFT-T	1,400
SY3-120MFT*	1,335	PRBUP-MFT-T	1,400
SY2-24	800	PRBUP-3-T	1,400
SY2-24MFT	1,335	PRBUP-MFT-T	1,400
SY3-24	800	PRBUP-3-T	1,400
SY3-24MFT	1,335	PRBUP-MFT-T	1,400

*New linkage required.

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
HONEYWELL "WHITE"	**BELIMO "GRAY"**

✦ Belimo 24V actuators are AC/DC

Model Numbers

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M4185A1001	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**					30-60	**<75**
M4185B1009	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			1	**2**	30-60	**<75**
M4185B1058	**NFBUP-S**	Yes	On/Off	**On/Off**	100-230	**24-240**	60	**90**			1	**2**	30-60	**<75**
M4185C1007	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			2	**2**	30-60	**<75**
M6184A1015	**AMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**					30-60	**150**
M6184A1023	**NMX120-3**	No	Floating Point	**On/Off, Floating Pt.**	120	**120**	75	**90**					15-30	**45**
M6184D1001	**NMBC24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	75	**90**					15-30	**45**
M6184D1035	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6184D1068	**AMX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			120-240	**150-adj**
M6184F1014	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M6194B1011	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**			1	**add S1A**	60-120	**150**
M6194D1017	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**					120-240	**150**
M6194E1006	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**			1	**add S1A**	120-240	**150**
M6284A1055	**AMCX24-MFT***	No	Floating Point	**On/Off, Floating Pt.**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6284D1000	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M6284F1013	**AMCX24-MFT**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M6285A1005	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M6285C1001	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M6294D1008	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	300	**360**					120-240	**150**
M7164A1017	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	35	**35**		**2-10 VDC**			30-60	**35**
M7164G1030	**LMCB24-SR***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	35	**35**		**2-10 VDC**			30-60	**35**
M7215A1008	**LF24-SR US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7284A1004	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284A1012	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284A1038	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	75	**180**		**2-10 VDC**			15-30	**35-adj**
M7284A1079	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**			30-60	**35-adj**
M7284C1000	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M7284C1059	**AMCX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30	**35-adj**
M7284C1067	**AMCX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	60	**35-adj**
M7284Q1009	**AMCX24-MFT***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**35-adj**
M7284Q1033	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30	**35-adj**
M7284Q1041	**AMCX24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	60	**35-adj**
M7285A1003	**NFX24-MFT***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**			30-60	**150-adj**
M7285A1045	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**			30-60	**150-adj**
M7285C1009	**NFX24-MFT-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M7285Q1008	**NFX24-MFT-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	2	**2**	30-60	**150-adj**
M7286G1009	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M7294A1010	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**		**2-10 VDC**			60-120	**150**
M7294Q1007	**GMB24-SR***	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	300	**360**		**2-10 VDC**	2	**add S2A**	60-120	**150**
M7415A1006	**LF24-ECON-R03 US**	Yes	Thermistor, 3000 ohm NTC	**Thermistor, 3000 ohm NTC**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7415B1004	**LF24-ECON-R03 US**	Yes	Thermistor, 3000 ohm NTC	**Thermistor, 3000 ohm NTC**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**95**
M7685A1025	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			30-60	**150-adj**
M8185D1006	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	60	**90**					30-60	**<75**
M8405A1006	**LF24-SR-E US**	Yes	On/Off, Floating Pt.	**2-10 VDC, 4-20 mA**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**			90	**150-adj**
M9164A1005	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	120	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1013	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	100-230	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1013	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	100-230	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164A1070	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9164C1001	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

Honeywell to Belimo

Actuator Replacement Cross Reference

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9164C1068	**LMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9164D1009	**LMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	35	**45**		**2-10 VDC**			30-60	**150-adj**
M9174B1027	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	1	**add S1A**	30-60	**150-adj**
M9174C1025	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9174C1033	**NMX24-MFT95***	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9174D1007	**NMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**			30-60	**150-adj**
M9184A1019	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**			30-60	**150-adj**
M9184C1031	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9184D1005	**NMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	75	**90**		**2-10 VDC**			15-30	**150-adj**
M9184D1021	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**			30-60	**150-adj**
M9184F1034	**AMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	150	**180**		**2-10 VDC**	2	**add S2A**	30-60	**150-adj**
M9185A1018	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9185C1006	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**	2		30-60	**150-adj**
M9185D1004	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9185E1019	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**	1		30-60	**150-adj**
M9186G1006	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	60	**180**		**2-10 VDC**			30-60	**150-adj**
M9194D1003	**GMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	300	**360**		**2-10 VDC**			120-240	**150-adj**
M9194E1000	**GMX24-MFT95**	No	0-135 ohm	**0-135 ohm**	24	**24**	300	**360**		**2-10 VDC**	1	**add S1A**	120-240	**150-adj**
ML6131B2001	**LMQX24-MFT**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	6	**35**					15	**2.5-adj**
ML6161A2008	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML6161A2009	**LMB24-3-P5-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**	2 kΩ	**5 kΩ**			90	**95**
ML6161B2024	**LMB24-3-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**					90	**95**
ML6161B2024	**LMB24-3-T**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**					90	**95**
ML6174A2002	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174A2010	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**180**					180	**95**
ML6174B2019	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174B2019	**NMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	90	**90**					90	**95**
ML6174D2009	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML6174E2008	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
ML7161A2008	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML7161A2008	**LMB24-SR-T**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**		**2-10 VDC**			90	**95**
ML7174A2001	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**			90	**95**
ML7174A2019	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			90	**95**
ML7174E2007	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			90	**95**
MN6120A1002	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	175	**180**					90	**95**
MN6120A1200	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	175	**180**			2	**add S2A**	90	**95**
MN6134A1003	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	300	**360**					90	**150**
MN6134A1003	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	300	**360**					90	**150**
MN7220A2007	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**			90	**95**
MN7234A2008	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**	2-10 VDC	**2-10 VDC**			90	**150**
MS4105A1002	**LF230 US**	Yes	On/Off	**On/Off**	100-250	**230**	35	**35**					90	**40-75**
MS4105A1002	**LF120 US**	Yes	On/Off	**On/Off**	100-250	**120**	35	**35**					90	**40-75**
MS4110A1002	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	100-250	**24-240**	88	**90**					90	**<75**
MS4110A1002	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	100-250	**24-240**	88	**90**					90	**<75**
MS4110A1200	**LF120-S US**	Yes	On/Off	**On/Off**	100-250	**120**	35	**35**			2	**1**	90	**40-75**
MS4110A1200	**LF230-S US**	Yes	On/Off	**On/Off**	100-250	**230**	35	**35**			2	**1**	90	**40-75**
MS4120A1001	**AFBUP**	Yes	On/Off	**On/Off**	100-250	**24-240**	175	**180**					90	**<75**
MS4120A1209	**AFBUP-S**	Yes	On/Off	**On/Off**	100-250	**24-240**	175	**180**			2	**2**	90	**<75**
MS7150A2206	**LF24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**35**	2-10 VDC	**2-10 VDC**	2	**1**	90	**150**
MS7505A2008	**LFC24-3-R US**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**Floating Point**	24	**24**	44	**35**	2-10 VDC	**2-10 VDC**			90	**90**
MS7510A2008	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
MS7510A2206	**LF24-MFT-S US**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	88	**35**	2-10 VDC	**2-10 VDC**	2	**1**	90	**150-adj**
MS7520A2007	**AFX24-MFT**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

HONEYWELL	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MS7520A2205	**AFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA, Floating Pt., On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
MS8105A1008	**LF24 US**	Yes	On/Off	**On/Off**	24	**24**	44	**35**					90	**40-75**
MS8110A1008	**NFB24**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	88	**90**					90	**<75**
MS8110A1206	**NFB24-S**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	88	**90**			2	**2**	90	**<75**
MS8120A1007	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	175	**180**					90	**<75**
MS8120A1205	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	175	**180**			2	**2**	90	**<75**
MS8309F1001	**FSNF24 US**	Yes	On/Off	**On/Off**	24	**24**	80	**70**					25	**<15**

** Belimo actuators are 95° max rotation.

Invensys to Belimo

Actuator Replacement Cross Reference

BELIMO

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
INVENSYS "WHITE"	**BELIMO "GRAY"**

✦ Belimo 24V actuators are AC/DC

Model Numbers

INVENSYS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MA-305	**TFB24**	Yes	On/Off	**On/Off**	24	**24**	16	**22**						**75**
MA-305	**TFB24-MFT**	Yes	On/Off	**On/Off**	24	**24**	16	**22**		**2-10 VDC**				**150-adj**
MA-305-500	**TFB24-S**	Yes	On/Off	**On/Off**	24	**24**	16	**22**			1	**1**		**75**
MA-305-500	**TFB24-MFT-S**	Yes	On/Off	**On/Off**	24	**24**	16	**22**		**2-10 VDC**	1	**1**		**150-adj**
MA-318	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**						**<75**
MA-318-500	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**			1	**2**		**<75**
MA-405	**TFB120**	Yes	On/Off	**On/Off**	120	**120**	16	**22**						**75**
MA-405	**TFCB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**				**1**		**<30**
MA-405-500	**TFB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**			1	**1**		**75**
MA-405-500	**TFCB120-S**	Yes	On/Off	**On/Off**	120	**120**	16	**22**			1	**1**		**<30**
MA40-7040	**LF120 US**	Yes	On/Off	**On/Off**	120	**120**	35	**35**					50	**40-75**
MA40-7040-501	**LF120-S US**	Yes	On/Off	**On/Off**	120	**120**	35	**35**			1	**1**	50	**40-75**
MA40-7041	**LF230 US**	Yes	On/Off	**On/Off**	230	**230**	35	**35**					50	**40-75**
MA40-7041-501	**LF230-S US**	Yes	On/Off	**On/Off**	230	**230**	35	**35**			1	**1**	50	**40-75**
MA40-7043	**LF24 US**	Yes	On/Off	**On/Off**	24	**24**	35	**35**					50	**40-75**
MA40-7043-501	**LF24-S US**	Yes	On/Off	**On/Off**	24	**24**	35	**35**			1	**1**	50	**40-75**
MA40-7151	**AFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	133	**180**					190	**<75**
MA40-7070	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**					80	**<75**
MA40-7070-502	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			2	**2**	80	**<75**
MA40-7071	**NFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**					80	**<75**
MA40-7071-502	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	60	**90**			2	**2**	80	**<75**
MA40-7073	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	60	**90**					80	**<75**
MA40-7073-502	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	60	**90**			2	**2**	80	**<75**
MA40-7150	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	133	**180**					190	**<75**
MA40-7150-502	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	133	**180**			2	**2**	190	**<75**
MA40-7153	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	133	**180**					190	**<75**
MA40-7153-502	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	133	**180**			2	**2**	190	**<75**
MA40-7170	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	150	**180**					145	**<75**
MA40-7171	**AFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	150	**180**					145	**<75**
MA40-7173	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	150	**180**					145	**<75**
MA-416	**NFBUP**	Yes	On/Off	**On/Off**	208	**24-240**	60	**90**					104	**<75**
MA-416-500	**NFBUP-S**	Yes	On/Off	**On/Off**	208	**24-240**	60	**90**			1	**2**	104	**<75**
MA41-7073	**NFB24**	Yes	On/Off	**On/Off**	24	**24**		**90**						**<75**
MA-418-500	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	60	**90**			1	**2**		**<75**
MA-419	**NFBUP**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**					120	**<75**
MA-419-500	**NFBUP-S**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**			1	**2**	120	**<75**
MA40-7151-502	**AFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	133	**180**			2	**2**	190	**<75**
MA5-419	**NFBUP**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**					120	**<75**
MA5-419-500	**NFBUP-S**	Yes	On/Off	**On/Off**	240	**24-240**	60	**90**			1	**2**	120	**<75**
MC-351	**GMB24-3**	No	On/Off	**On/Off, Floating Pt.**	24	**24**	220	**360**					70	**95**
MC-421	**AMQX24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	175	**140**		**2-10 VDC**			20	**7-adj**
MC-431	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			30	**150-adj**
MC-4311	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			30	**150-adj**
MC5-4311	**GMB24-MFT**	No	On/Off	**MFT, 2-10 VDC default**	24	**24**	220	**360**		**2-10 VDC**			36	**150-adj**
MF40-6043	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					<90	**95**
MF40-6043-502	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**			2	**add S2A**	<90	**95**
MF40-6043-510	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					<90	**95**
MF40-6083	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					120	**95**
MF40-6153	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	133	**180**					120	**95**
MF40-7043	**LF24-3 US**	Yes	Floating Point	**Floating Point**	24	**24**	35	**35**	2-10 VDC				130	**150**
MF40-7043-501	**LF24-3-S US**	Yes	Floating Point	**Floating Point**	24	**24**	35	**35**			1	**1**	195	**150**
MF40-7073	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			190	**150-adj**
MF40-7073-502	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	195	**150-adj**

** Belimo actuators are 95° max rotation.

INVENSYS	BELIMO**	Spring Return	Control Signal		Power +		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MF40-7153	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**			190	**150-adj**
MF40-7153-502	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**	2	**2**	190	**150-adj**
MF40-7173	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MF41-6043	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					90	**95**
MF41-6043-502	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**			2	**add S2A**	90	**95**
MF41-6043-510	**LMB24-3-P10-T**	No	Floating Point	**Floating Point**	24	**24**	35	**45**	1 kΩ	**10 kΩ**			90	**95**
MF41-6083	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					90	**95**
MF41-6083-502	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**			2	**add S2A**	90	**95**
MF41-6153	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	133	**180**					90	**95**
MF41-6343	**GMB24-3**	No	Floating Point	**Floating Point**	24	**24**	300	**360**					90	**150**
MF41-7073	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**			195	**150-adj**
MF41-7073-502	**NFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	60	**90**		**2-10 VDC**	2	**2**	195	**150-adj**
MF41-7153	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**			190	**150-adj**
MF41-7153-502	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	133	**180**		**2-10 VDC**	2	**2**	190	**150-adj**
MF-6343	**GMB24-3**	No	Floating Point	**Floating Point**	24	**24**	300	**360**					145	**150**
MM-400	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**			50	**35**
MM-400-002	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**	2	**add S2A**	50	**35**
MM-500	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**			55	**150-adj**
MM-500-002	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	2	**2**	55	**150-adj**
MMR-400	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**			50	**35**
MMR-400-002	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**45**		**2-10 VDC**	2	**add S2A**	50	**35**
MMR-500	**NFX24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**			55	**150-adj**
MMR-500-002	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	2	**2**	55	**150-adj**
MP-361	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	95	**95**
MP-361-600	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-361-691	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-371	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**95**
MP-371-600	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-371-602	**NFX24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**		**2-10 VDC**	1	**2**	90	**150-adj**
MP-381	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	130	**150**
MP-382	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	130	**150**
MP-421	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	25	**150-adj**
MP-422	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	25-250	**150-adj**
MP-424	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	60	**90**		**2-10 VDC**	1	**add S1A**	13-130	**150-adj**
MP-451	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	80	**90**		**2-10 VDC**	1	**add S1A**	80	**150-adj**
MP-453	**GMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	220	**360**		**2-10 VDC**	1	**add S1A**	40	**150-adj**
MP-465	**NFB24-SR-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	1	**2**	50	**95**
MP-475	**NFB24-SR-S***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	50	**90**		**2-10 VDC**	1	**2**	50	**95**
MP-481	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-483	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	65	**90**		**2-10 VDC**	1	**add S1A**	65	**150-adj**
MP-485	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-495	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-483	**NMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	65	**90**		**2-10 VDC**	1	**add S1A**	65	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

Invensys to Belimo

Actuator Replacement Cross Reference

INVENSYS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
MP-485	**AMX24-MFT***	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	130	**180**		**2-10 VDC**	1	**add S1A**	130	**150-adj**
MP-5233	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	19	**22**		**2-10 VDC**			60	**150-adj**
MP-5433	**TFB24-MFT***	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	120	**24**	19	**22**		**2-10 VDC**			60	**150-adj**
MP-5613	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**		**22**		**2-10 VDC**			60	**150-adj**
MS-1233	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-002	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-100	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**22**		**2-10 VDC**			225	**150-adj**
MS-1233-102	**TFB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	20	**17**		**2-10 VDC**			225	**150-adj**
MS40-7171	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7171	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS40-7043	**LF24-SR US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**35**	2-10 VDC	**2-10 VDC**			130	**150**
MS40-7043-501	**LF24-SR-S US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**35**	2-10 VDC	**2-10 VDC**	1	**1**	130	**150**
MS40-7073-502	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**	2-10 VDC	**2-10 VDC**	2	**2**	130	**95**
MS40-7153	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**			130	**95**
MS40-7153-502	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**	2	**2**	195	**150-adj**
MS40-7170	**AFB24-SR***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7170	**AFB24-MFT***	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS40-7173	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**95**
MS40-7173	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**			145	**150-adj**
MS41-6043	**LMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**35**
MS41-6043-502	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
MS41-6043-520	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
MS41-6043-522	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
MS41-6083	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**95**
MS41-6083-502	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6083-520	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6083-522	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
MS41-6153	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**				**95**
MS41-6343	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	300	**360**	2-10 VDC	**2-10 VDC**				**150**
MS41-7073	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	60	**90**	2-10 VDC	**2-10 VDC**			195	**95**
MS41-7153	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	133	**180**	2-10 VDC	**2-10 VDC**			190	**95**
MS50-E2001	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-E2101	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-E2301	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**		**2-10 VDC**			145	**150-adj**
MS50-H2001	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**
MS50-H2101	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**
MS50-H2301	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	300	**360**		**2-10 VDC**			145	**150-adj**

* Add 120/24 volt transformer.

** Belimo actuators are 95° max rotation.

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend	
JOHNSON CONTROLS "WHITE"	BELIMO "GRAY"

✦ Belimo 24V actuators are AC/DC

Model Numbers

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M110AAB-1	**LF120-S US**	Yes	On/Off, Floating Pt.	**On/Off**	120	**120**	25	**35**			1	**1**		**40-75**
M110AGA-1	**LF24-3 US**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	25	**35**						**150**
M110AGB-1	**LF24-3-S US**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	25	**35**			1	**1**		**150**
M110GGA-3	**LF24-MFT US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**				**150-adj**
M110JGA-1	**LF24-MFT US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**				**150-adj**
M110JGB-1	**LF24-MFT-S US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	25	**35**	2-10 VDC	**2-10 VDC**	1	**1**		**150-adj**
M120AAA-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	35	**45**						**95**
M120AAC-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	35	**45**			2	**add S2A**		**95**
M120AGA-1	**LMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	35	**45**						**95**
M120GGA-3	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**150-adj**
M120JAA-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
M120JAC-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	35	**45**	2-10 VDC	**2-10 VDC**	2	**add S2A**		**95**
M120JGA-1	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	35	**45**	2-10 VDC	**2-10 VDC**				**95**
M120MGA-1	**LMX24-MFT95**	No	0-135 ohm	**MFT, 2-10 VDC default**	24	**24**	35	**45**						**150-adj**
M130AAA-1	**NFBUP**	Yes	On/Off, Floating Pt.	**On/Off**	120	**24-240**	50	**90**						**<75**
M130AAB-1	**NFBUP-S**	Yes	On/Off, Floating Pt.	**On/Off**	120	**24-240**	50	**90**			1	**2**		**<75**
M130AGA-1	**NFB24**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	50	**90**						**<75**
M130AGB-1	**NFB24-S**	Yes	On/Off, Floating Pt.	**On/Off**	24	**24**	50	**90**			1	**2**		**<75**
M130GGA-3	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**				**150-adj**
M130JGA-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**				**150-adj**
M130JGB-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**	1			**150-adj**
M130JGC-1	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	50	**90**	2-10 VDC	**2-10 VDC**	2			**150-adj**
M130MGA-1	**AFB24-MFT95**	Yes	0-135 ohm	**0-135 ohm**	24	**24**	50	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M140AAA-1	**LMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	75	**45**						**95**
M140AGA-1	**LMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	75	**45**						**95**
M140GGA-3	**LMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M140JAA-1	**LMX120-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	120	**120**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M140JGA-1	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	75	**45**	2-10 VDC	**2-10 VDC**				**95**
M150AAA-1	**AMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	150	**180**						**95**
M150AAB-1	**AMB120-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	120	**120**	150	**180**			1	**add S1A**		**95**
M150AGA-1	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**						**95**
M150AGB-1	**AMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	150	**180**			1	**add S1A**		**95**
M150GGA-3	**AMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M150JGA-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**95**
M150JGB-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**	1	**add S1A**		**95**
M150JGC-1	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**	2	**add S2A**		**95**
M150MGA-1	**AMB24-MFT**	No	0-135 ohm	**MFT, 2-10 VDC default**	24	**24**	150	**180**	2-10 VDC	**2-10 VDC**				**150-adj**
M9108-GGA-2	**NMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**			60	**45**
M9101-AGA-2N	**LMB24-3-T**	No	Floating Point	**Floating Point**	24	**24**	10	**45**					15	**95**
M9104-AGA-2N	**LMB24-3-T**	No	On/Off, Floating Pt.	**Floating Point**	24	**24**	35	**45**					90	**95**
M9104-AGA-2N	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	35	**45**					90	**95**
M9106-AGA-2	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	53	**45**					60	**95**
M9106-AGA-2N01	**LMCB24-3**	No	On/Off, Floating Pt.	**Floating Point**	24	**24**	53	**45**					60	**35**
M9106-AGA-2N01	**LMCB24-3-T**	No	Floating Point	**Floating Point**	24	**24**	53	**45**					60	**35**
M9106-AGA-2N02	**LMB24-MFT**	No	On/Off, Floating Pt.	**MFT, 2-10 VDC default**	24	**24**	53	**45**		**2-10 VDC**			120	**150-adj**
M9106-AGA-2N02	**LMX24-MFT**	No	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**45**		**2-10 VDC**			120	**150-adj**

** Belimo actuators are 95° max rotation.

Johnson Controls to Belimo

Actuator Replacement Cross Reference

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9106-AGC-2	**LMB24-3**	No	Floating Point	**Floating Point**	24	**24**	53	**45**			2	**add S2A**	60	**95**
M9106-AGF-2	**LMB24-3-P10-T**	No	Floating Point	**Floating Point**	24	**24**	53	**45**		**10 kΩ**			60	**95**
M9106-GGA-2	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**45**		**2-10 VDC**			60	**95**
M9106-IGA-2	**LMB24-MFT**	No	Floating Point	**Floating Point**	24	**24**	53	**45**		**2-10 VDC**			60	**150-adj**
M9108-AGA-2	**NMCB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**					25-50	**45**
M9108-AGC-2	**NMCB24-3**	No	Floating Point	**Floating Point**	24	**24**	70	**90**			2	**add S2A**	25-50	**45**
M9108-GGC-2	**NMCB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**		**2-10 VDC**	2	**add S2A**	25-50	**45**
M9108-HGA-2	**NMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	70	**90**		**2-10 VDC**			25-50	**150-adj**
M9108-HGC-2	**NMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	70	**90**		**2-10 VDC**	2	**add S2A**	25-50	**150-adj**
M9109-AGA-2	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	80	**90**					60	**95**
M9109-AGC-2	**NMB24-3**	No	Floating Point	**Floating Point**	24	**24**	80	**90**			2	**add S2A**	60	**95**
M9109-GGA-2	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	80	**90**		**2-10 VDC**			60	**95**
M9109-GGC-2	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	80	**90**		**2-10 VDC**	2	**add S2A**	60	**95**
M9116-AGA-2	**AMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC				70-115	**95**
M9116-AGA-2	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	140	**180**					70-115	**95**
M9116-AGC-2	**AMB24-3-S**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC		2	**add S2A**	70-115	**95**
M9116-AGC-2	**AMB24-3**	No	Floating Point	**Floating Point**	24	**24**	140	**180**			2	**add S2A**	70-115	**95**
M9116-AGD-2	**AMB24-3 + P140A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC	**0-140 Ω**			70-115	**95**
M9116-AGE-2	**AMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	140	**180**	0-10 VDC	**0-1000 Ω**			70-115	**95**
M9116-AGE-2	**AMB24-3 + P1000A**	No	Floating Point	**Floating Point**	24	**24**	140	**180**		**0-1000 Ω**			70-115	**95**
M9116-GGA-2	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**95**
M9116-GGA-2	**AMB24-MFT**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**150-adj**
M9116-GGC-2	**AMB24-SR-S**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**	2	**add S2A**	70-115	**95**
M9116-GGC-2	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**		**2-10 VDC**	2	**add S2A**	70-115	**95**
M9116-HGA-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**			70-115	**150-adj**
M9116-HGA-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-115	**150-adj**
M9116-HGC-2	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**	0-10 VDC	**2-10 VDC**	2		70-115	**150-adj**
M9124-AGA-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**					115-175	**150**
M9124-AGC-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**			2	**add S2A**	70-130	**150**
M9124-AGD-2	**GMB24-3 + P140A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**		**0-140 Ω**			115-175	**150**
M9124-AGE-2	**GMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	210	**360**		**0-1000 Ω**			70-130	**150**
M9124-GGA-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	210	**360**		**2-10 VDC**			70-130	**150**
M9124-HGA-2	**GMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	210	**360**		**2-10 VDC**			70-130	**150-adj**
M9124-HGC-2	**GMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	210	**360**		**2-10 VDC**	2	**add S2A**	70-130	**150-adj**
M9132-AGA-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**					115-205	**150**
M9132-AGC-2	**GMB24-3**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**			2	**add S2A**	70-130	**150**
M9132-AGE-2	**GMB24-3 + P1000A**	No	Floating Point	**On/Off, Floating Pt.**	24	**24**	280	**360**		**0-1000 Ω**			115-205	**150**
M9132-GGA-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	280	**360**		**2-10 VDC**			70-130	**150**
M9132-GGC-2	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	280	**360**		**2-10 VDC**	2	**add S2A**	70-130	**150**
M9206-AGA-2	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**90**		**2-10 VDC**			90	**150-adj**
M9206-AGC-2	**NFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	53	**90**		**2-10 VDC**	2		90	**150-adj**
M9206-BAA-2S	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	53	**90**					90	**<75**
M9206-BAC-2S	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	53	**90**			2	**2**	90	**<75**
M9206-BGA-2S	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	53	**90**					60	**<75**
M9206-BGB-2S	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	53	**90**			1	**2**	60	**<75**
M9206-BGC-2	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	53	**90**			2	**2**	60	**<75**
M9206-GGA-2	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**90**		**2-10 VDC**			60	**95**
M9206-GGA-2MP	**LF24-MFT-20 US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	53	**35**		**2-10 VDC**			90	**150-adj**
M9206-GGC-2	**LF24-SR-S US**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	53	**35**		**2-10 VDC**	2	**1**	90	**40-75**
M9206-GGC-2MP	**LF24-MFT-S-20 US**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	53	**35**		**2-10 VDC**	2	**1**	90	**150-adj**
M9216-AGA-2	**AFX24-MFT**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9216-AGC-2	**AFX24-MFT-S**	Yes	Floating Point	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-BAA-2	**AFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	140	**180**					70-130	**<75**
M9216-BAC-2	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	140	**180**			2	**2**	70-115	**<75**
M9216-BGA-2	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	140	**180**					70-130	**<75**

** Belimo actuators are 95° max rotation.

JOHNSON CONTROLS	BELIMO**	Spring Return	Control Signal		Power +		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
M9216-BGC-2	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	140	**180**			2	**2**	70-130	**<75**
M9216-GGA-2	**AFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	140	**180**		**2-10 VDC**			70-130	**95**
M9216-GGC-2	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-HGA-2	**AFB24-MFT**	Yes	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9216-HGC-2	**AFB24-MFT-S**	Yes	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	140	**180**		**2-10 VDC**	2	**2**	70-130	**150-adj**
M9216-JGA-2	**AFX24-MFT**	Yes	Floating Point	**Floating Point**	24	**24**	140	**180**		**2-10 VDC**			70-130	**150-adj**
M9208-AGA-1	**NFX24-MFT**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	70	**90**					150	**150-adj**
M9208-AGC-1	**NFX24-MFT-S**	Yes	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	70	**90**			2	**2**	150	**150-adj**
M9208-BGA-1	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	70	**90**					55-71	**<75**
M9208-BGC-1	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	70	**90**			2	**2**	55-71	**<75**
M9208-BDA-1	**NFBUP**	Yes	On/Off	**On/Off**	230	**24-240**	70	**90**					55-71	**<75**
M9208-BDC-1	**NFBUP-S**	Yes	On/Off	**On/Off**	230	**24-240**	70	**90**			2	**2**	55-71	**<75**
M9208-GGA-1	**NFB24-SR**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**			150	**95**
M9208-GGC-1	**NFB24-SR-S**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	70	**90**	2-10 VDC	**2-10 VDC**	2	**2**	150	**95**

** Belimo actuators are 95° max rotation.

Siemens to Belimo

Actuator Replacement Cross Reference

BELIMO

Auxiliary Switches

add S2A	2 auxiliary switches (add-on)
add S1A	1 auxiliary switch (add-on)
1	1 auxiliary switch (built-in)
2	2 auxiliary switches (built-in)

Legend

SIEMENS "WHITE"	BELIMO "GRAY"

✦ Belimo 24V actuators are AC/DC

Model Numbers

SIEMENS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		Feedback		Auxiliary Switches		Timing (seconds)	
GBB151.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**			150	**95**
GBB156.1U	**AMB24-SR**	No	On/Off	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**	2	**add S2A**	150	**95**
GBB161.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**			150	**95**
GBB163.1U	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GBB164.1U	**AMB24-MFT**	No	2-10 VDC w/ adj. start and span	**MFT, 2-10 VDC default**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**		**add S2A**	150	**150-adj**
GBB166.1U	**AMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**	2-10 VDC	**2-10 VDC**	2		150	**95**
GBB171.1U	**AMB24-3**	No	On/Off	**On/Off, Floating Pt.**	24	**24**	177	**180**					150	**95**
GBB175.1U	**AMB24-SR**	No	On/Off	**2-10 VDC, 4-20 mA**	24	**24**	177	**180**		**2-10 VDC**			150	**95**
GCA121.1U	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	160	**180**					90	**<75**
GCA126.1U	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	160	**180**			2	**2**	90	**<75**
GCA131.1P	**AFB24**	Yes	On/Off	**On/Off**	24	**24**	160	**180**					90	**<75**
GCA135.1U	**AFB24-S**	Yes	On/Off	**On/Off**	24	**24**	160	**180**			2	**2**	90	**<75**
GCA151.1U	**AFB24-MFT**	Yes	4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**		**2-10 VDC**			90	**150-adj**
GCA156.1U	**AFB24-MFT-S**	Yes	4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**		**2-10 VDC**	2	**2**	90	**150-adj**
GCA161.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GCA163.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GCA164.1U	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA166.1U	**AFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA166.1U	**AFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	160	**180**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GCA221.1U	**AFBUP**	Yes	On/Off	**On/Off**	120	**120**	160	**180**					90	**<75**
GCA226.1U	**AFBUP-S**	Yes	On/Off	**On/Off**	120	**120**	160	**180**			2	**2**	90	**<75**
GDE131.1P	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**					90	**95**
GDE136.1P	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**			2	**add S2A**	90	**95**
GDE161.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**			90	**95**
GDE163.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**			90	**95**
GDE164.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**	2	**add S2A**	90	**95**
GDE166.1P	**LMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	44	**45**		**2-10 VDC**	2	**add S2A**	90	**95**
GEB131.1U	**LMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	44	**45**					90	**95**
GIB151.1U	**GMB24-SR**	No	4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**		**2-10 VDC**			150	**150**
GIB156.1U	**GMB24-SR**	No	4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**		**2-10 VDC**	2	**add S2A**	150	**150**
GIB161.1U	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**			150	**150**
GIB163.1U	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GIB164.1U	**GMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150-adj**
GIB166.1U	**GMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	310	**360**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GIB171.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**					150	**150**
GIB171.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**					150	**150**
GIB175.1U	**GMB24-3**	No	On/Off, Floating Pt.	**On/Off, Floating Pt.**	24	**24**	310	**360**			2	**add S2A**	150	**150**
GLB131.1P	**NMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	88	**90**					150	**150**
GLB136.1P	**NMB24-3**	No	3 position	**On/Off, Floating Pt.**	24	**24**	88	**90**			2	**add S2A**	150	**150**
GLB161.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			150	**150**
GLB163.1P	**NMB24-MFT**	No	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**			150	**150-adj**
GLB164.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GLB166.1P	**NMB24-SR**	No	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	88	**90**	2-10 VDC	**2-10 VDC**	2	**add S2A**	150	**150**
GMA121.1U	**NFB24**	Yes	On/Off	**On/Off**	24	**24**	62	**90**					90	**<75**
GMA126.1U	**NFB24-S**	Yes	On/Off	**On/Off**	24	**24**	62	**90**			2	**2**	90	**<75**
GMA131.1U	**NFX24-MFT**	Yes	3 position	**MFT, 2-10 VDC default**	24	**24**	62	**90**		**2-10 VDC**			90	**150-adj**
GMA136.1U	**NFX24-MFT-S**	Yes	3 position	**MFT, 2-10 VDC default**	24	**24**	62	**90**		**2-10 VDC**	2	**2**	90	**150-adj**

** Belimo actuators are 95° max rotation.

SIEMENS	BELIMO**	Spring Return	Control Signal		Power ✦		Torque (in-lbs)		wFeedback		Auxiliary Switches		Timing (seconds)	
GMA161.1U	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GMA163.1U	**NFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**			90	**150-adj**
GMA166.1U	**NFB24-MFT-S**	Yes	2-10 VDC, 4-20 mA	**MFT, 2-10 VDC default**	24	**24**	62	**90**	2-10 VDC	**2-10 VDC**	2	**2**	90	**150-adj**
GMA221.1U	**NFBUP**	Yes	On/Off	**On/Off**	120	**24-240**	62	**90**					90	**<75**
GMA226.1U	**NFBUP-S**	Yes	On/Off	**On/Off**	120	**24-240**	62	**90**			2	**2**	90	**<75**
GQD121.1P	**TFB24**	Yes	On/Off	**On/Off**	24	**24**	20	**22**					40-75	**<75**
GQD131.1P	**TFB24-3**	Yes	Floating Point	**Floating Point**	24	**24**	20	**22**					40-75	**95**
GQD151.1P	**TFB24-MFT**	Yes	2-10 VDC, 4-20 mA	**2-10 VDC, 4-20 mA**	24	**24**	20	**22**	2-10 VDC	**2-10 VDC**			40-75	**150-adj**
GQD221.1U	**TFCB120-S***	Yes	On/Off	**On/Off**	120	**120**	20	**22**					40-75	**30**

*Do not wire switch.

** Belimo actuators are 95° max rotation.

Actuator Retrofit Linkage

Quick Actuator Installation on Jackshaft

5 YEAR WARRANTY

Technical Data	ZG-JSL, ZG-JSLA
Fits shaft diameter	½" to ¾" with insert, 1.05" without insert
Materials:	
Housing	galvanized steel
Bearings	GF Delrin
Shafts	steel
Max torque output	90% of rated actuator torque
Max actuator yield	see chart on right
Mech. angle of rotation	90° mountable
Ambient temperature	-22°F to +122°F [-33°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing type	NEMA 2
Weight	3.25 lbs [1.47 kg]

Application

The ZG-JSL jackshaft linkage is designed to easily attach to any part of a jackshaft and allows easy installation of select Belimo actuators.

The unique open ended design and clamp insert allows the ZG-JSL to be used with any jackshaft from ½" to ¾" in diameter. Removal of the insert will allow the linkage to attach to a maximum shaft diameter of 1.05". Changing the anti-rotation plate will allow various actuators to be mounted.

Default/Configuration

The ZG-JSL linkage can also be configured by moving the anti-rotation plate 90° for space saving applications. See mounting configurations below. The ZG-JSLA will have a factory mounted actuator on the linkage in the vertical position only.

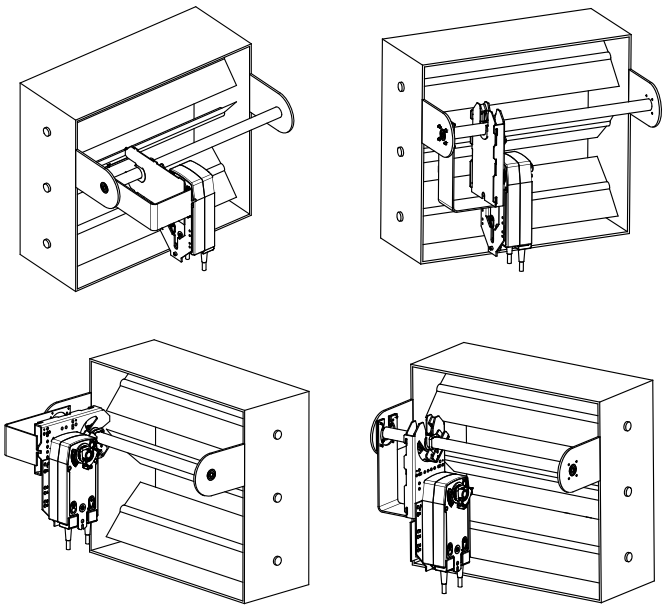
Operation

The ¾" diameter built-in steel shaft allows direct coupling to Belimo series actuators (chart below). There is a torque reduction when using the ZG-JSL linkage. Verify application requirements before ordering.

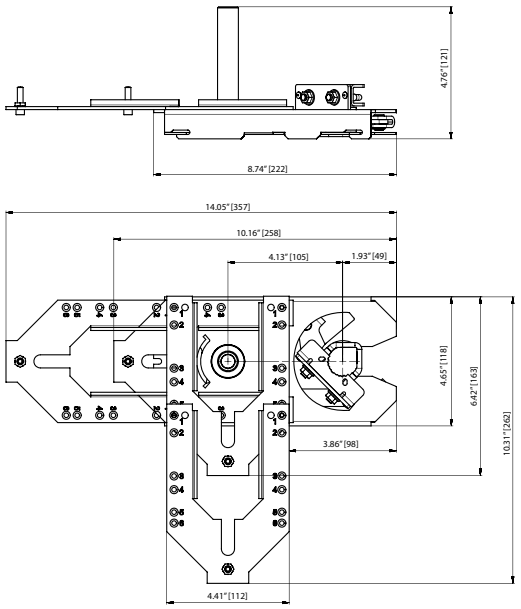
Actuator	Torque Reduction
EF Series*	239 in-lbs
Classic AF Series	123 in-lbs
AF Series	166 in-lbs
NF Series	87 in-lbs
LF Series***	33 in-lbs
GM/GK Series**	288 in-lbs
AM Series	166 in-lbs
NM Series	87 in-lbs

* ZG-121 adapter must be used with EF.
** EF, GM/GK not for use with ½" shafts.
*** K6-1 clamp must be used with LF.

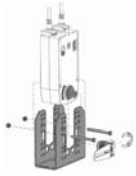
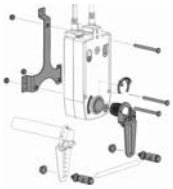
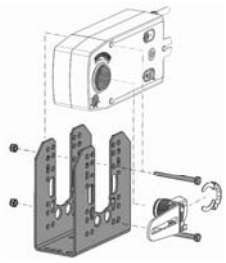
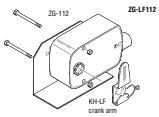
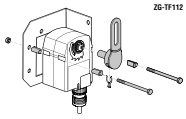
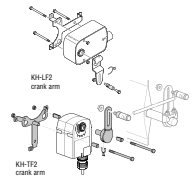
Mounting Configurations



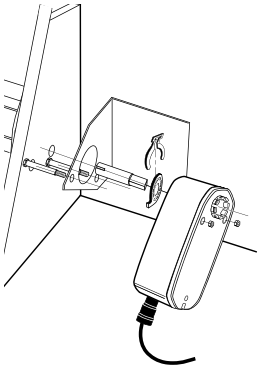
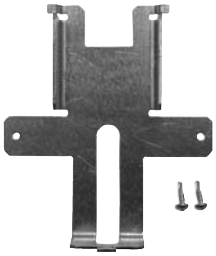
Dimensions (Inches [mm])



CRANK ARM KITS AND MOUNTING PLATES

	**ZG-AFB118** Crank arm adaptor kit	The ZG-AFB118 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-AFB118 mounting bracket is designed to mount the NF and AF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit.
	**ZG-AFB** Crank arm adaptor kit	The ZG-AFB crank arm adaptor kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100 and ZG-101 universal mounting brackets are needed to fully convert to crank arm operation.
	**ZG-100 and ZG101** Universal mounting brackets	The ZG-100 and ZG-101 universal mounting brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It can be used for outside or inside the duct mounting, fastened to the duct work or directly to the damper assembly. It can also be used to mount to other surfaces rather than the duct. The ZG-100 and ZG-101 are provided with pre-punched hole patterns for the AM, GM, NF, and AF series actuators. The ZG-100 hole pattern layout allows mounting these actuators in three different, mounting orientations.
	**ZG-118** Universal mounting brackets	The ZG-118 is provided with hole patterns to mount the NF and AF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-118 is designed to mount the NF and AF series actuators in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit. The ZG-118 is designed to place the KH-AFB crank arm in the same relative position as the Honeywell® Mod IV and Mod III actuators.
	KH-AFB Crank arm	The KH-AFB crank arm is required to fully convert the AF for crank arm operation.
 	**ZG-LF112 and ZG-TF112** Crank arm adaptor kit	The ZG-112/113 is provided with hole patterns to mount the LF and TF series actuators in either a horizontal or vertical position to meet space requirements. The ZG-112/113 mounting bracket is designed to mount the LF and TF series actuator in the same mounting locations as common foot mounted, crank arm style actuators. Hole patterns in the base match common Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators for easy retrofit. Note: May require crank arm and ball joints.
	**ZG-LF2 and ZG-TF2** Crank arm adaptor kit	The ZG-LF2 and ZG-TF2 crank arm adaptor kits can be used to replace foot mounted, crank arm style actuators. The ZG-LF2 allows for easy retrofit of Honeywell®, Siebe® (Barber Colman®), and Johnson Controls® actuators. Note: May require additional damper shaft crank arm and ball joints.
	**ZG-GMA and ZG-NMA** Crank arm adaptor kits	The ZG-GMA and ZG-NMA crank arm adaptor kits are designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100, ZG-101, ZG-103 and ZG-104 universal mounting brackets are needed to fully convert to crank arm operation.
	ZG-103 and ZG-104 Universal mounting brackets	The ZG-103 and ZG-104 universal mounting brackets are designed for applications where the actuator cannot be mounted directly to the shaft, and no proper mounting surface is available. It may be used for outside or inside the duct mounting, fastened to the duct work or directly to the damper assembly. It may also be used to mount to other surfaces rather than the duct. The ZG-103 and ZG-104 are provided with pre-punched hole patterns for the NM, AM, GM, NF, and AF series actuators. The ZG-103 and ZG-104 hole pattern layout allows mounting these actuators in two different, mounting orientations.

MOUNTING PLATES

	**ZG-102** GM and AF dual mounting bracket	The ZG-102 multiple actuator mounting bracket is designed for where it is necessary to mount two actuators to one shaft to provide extra torque. The dual mounting bracket is typically used with AF and GM series actuators offering the highest torque range available.
	**ZG-LFC114** Mounting kit for Trane Voyager unit retrofit	The ZG-LFC114 crank arm adaptor kit is designed for use with a LF actuator for a Trane Voyager® economizer actuator retrofit. Use this kit when replacing Honeywell® M84... and M7... actuators.
	**ZG-121** Support plate for ZG-JSL with EF actuator	The ZG-121 support plate is designed for use with the ZG-JSL jackshaft shaft linkage and the EF actuator.
	**ZG-EFB** Crank arm adaptor kit	The ZG-EFB crank arm adaptor kit is designed for applications where the actuator cannot be mounted directly to the damper shaft. ZG-100 and ZG-1010 universal mounting brackets are needed to fully convert to crank arm operation.

Fire and Smoke Actuator Replacement Solutions

Belimo fire and smoke actuators are designed for operation in smoke and combination fire and smoke dampers in ventilation and air-conditioning systems with a torque range from 18 in-lbs to 180 in-lbs @ 350°F. For maximum safety in all situations, the fire and smoke actuators meet all codes for commercial buildings in the U.S., passes UL 555 & UL 555S at 350ºF and tested for 30,000 open-closed cycles with approved dampers. Belimo fire and smoke actuators exceed UL's requirement of 20,000 cycles at damper static load.

5 YEAR WARRANTY

PROBLEM

SOLUTION

Actuator replacement for defective or obsolete motors providing maximum safety

Belimo fire and smoke actuators have an extensive torque offering and are specifically designed for operation with fire, smoke and combination fire, and smoke dampers in ventilation and air-conditioning systems. An integral part of the life safety system, Belimo fire and smoke actuators provide high performance, low power consumption, and are complaint with Life Safety Codes and Standards.

- Fire and smoke actuators meet UL555 and UL555S listing with all damper manufacturers
- UL 2043 suitable for use in air-handling spaces (plenums)
- Meets New York City OTCR and MEA requirements; California State Fire Marshall Listed
- Compact solutions for space constrained locations
- Range of torque offerings to fit variety of applications (18, 30, 70, and 180 in-lbs)
- Saves energy and cost with lowest current draws versus the competition
- Retrofit installation instructions available at www.belimo.us/firesmoke

For assistance with your project, contact Belimo Technical Support at 800-543-9038 (USA) or 866-805-7089 (Canada).

Fire and Smoke Actuator Replacement Solutions

Start with the damper, not the actuator and use the UL damper/actuator OEM listings or the recommended torques below.

Different methods are employed by different manufacturers to achieve the fire spring-closed function. For example, Pottorff damper with the MA220 actuator is a single spring. To replace the discontinued MA220, the fusible link must be removed and a thermal sensor installed.

Ruskin dampers use an external spring and a thermal sensor, so removal of the old MA220 and external spring and replacement with Belimo is all that is required.

Note: NFPA 80 and NFPA 105 require that dampers be repaired as soon as possible. In most jurisdictions, this is a normal repair. In some areas, a permit and 3rd party inspection may be required. In all cases, a log of periodic testing and any repairs must be maintained within the facility. Repair of any fire and smoke damper is required by codes. A permit and retest may be required if the replacement is not an ordinary repair.

When any fire alarm wiring is touched, or any structural changes are made, the fire department or building official must be consulted, and a permit plus inspection is required.

Visit http://www.belimo.us/firesmoke for detailed instructions for each damper manufacturer.

	Model	Belimo Replacement Model				
NOTES	**HONEYWELL**	**BELIMO**	**Spring Return**	**Control Signal**	**Power Supply**	**Torque (in-lbs)**
	ML4105A1000	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4105B1009	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4105C1008	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4105D1007	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4115A1009	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115A1017	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115B1008	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115B1016	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115C1007	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4115C1015	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4115D	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4115D1006	FSLF230 US	Yes	On/Off	230 VAC	30
	ML4115H	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115H1002	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4115J	FSLF120 US	Yes	On/Off	120 VAC	30
Go to www.belimo.us/firesmoke for Installation Instructions.	ML4202	FSLF120 US	Yes	On/Off	120 VAC	30
FSTF may be used on dampers <1.5 sq.ft.	ML4202F1000	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4302F1008	FSLF120 US	Yes	On/Off	120 VAC	30
Use FSLF for dampers < 4 sq.ft.	ML4702	FSLF120 US	Yes	On/Off	120 VAC	30
	ML4802	FSLF230 US	Yes	On/Off	230 VAC	30
Use FSNF for dampers between 4 sq.ft. and 12 sq.ft.	ML8105A1006	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8105B1005	FSLF24 US	Yes	On/Off	24 VAC	30
Use FSAF*A for dampers up to 16 sq.ft.	ML8115A1005	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8115A1013	FSLF24 US	Yes	On/Off	24 VAC	30
Multi-section dampers should be investigated for number of actuators required.	ML8115B1004	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8115B1012	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8115H	FSLF24 US	Yes	On/Off	24 VAC	30
See data sheets for linkages. FSLF is direct couple only.	ML8115J	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8202	FSLF24 US	Yes	On/Off	24 VAC	30
	ML8302	FSLF24 US	Yes	On/Off	24 VAC	30
	MS4104F1010	FSLF120 US	Yes	On/Off	120 VAC	30
	MS4104F1010	FSLF120 US	Yes	On/Off	120 VAC	30
	MS4104F1210	FSLF120-S US	Yes	On/Off	120 VAC	30
	MS4109F1010	FSNF120 US	Yes	On/Off	120 VAC	70
	MS4109F1210	FSNF120-S US	Yes	On/Off	120 VAC	70
	MS4120F1006	FSAF120A	Yes	On/Off	120 VAC	180
	MS4120F1204	FSAF120A-S	Yes	On/Off	120 VAC	180
	MS4209F	FSNF120 US	Yes	On/Off	120 VAC	70
	MS4209F1007	FSNF120 US	Yes	On/Off	120 VAC	70
	MS4309F	FSNF120 US	Yes	On/Off	120 VAC	70
	MS4309F1005	FSNF120 US	Yes	On/Off	120 VAC	70
	MS4604F1010	FSLF230 US	Yes	On/Off	230 VAC	30
	MS4604F1210	FSLF230-S US	Yes	On/Off	230 VAC	30

Honeywell and Ruskin to Belimo

Fire and Smoke Actuator Replacement Cross Reference

	Model	Belimo Replacement Model				
NOTES	**HONEYWELL**	**BELIMO**	**Spring Return**	**Control Signal**	**Power Supply**	**Torque (in-lbs)**
Go to www.belimo.us/firesmoke for Installation Instructions. FSTF may be used on dampers <1.5 sq.ft. Use FSLF for dampers < 4 sq.ft. Use FSNF for dampers between 4 sq.ft. and 12 sq.ft. Use FSAF*A for dampers up to 16 sq.ft. Multi-section dampers should be investigated for number of actuators required. See data sheets for linkages. FSLF is direct couple only.	MS4609F1010	FSNF230 US	Yes	On/Off	230 VAC	70
	MS4609F1210	FSNF230-S US	Yes	On/Off	230 VAC	70
	MS4620F1005	FSAF230A	Yes	On/Off	230 VAC	180
	MS4620F1203	FSAF230A-S	Yes	On/Off	230 VAC	180
	MS4709F	FSNF230 US	Yes	On/Off	230 VAC	70
	MS4709F1014	FSNF230 US	Yes	On/Off	230 VAC	70
	MS4809F	FSNF230 US	Yes	On/Off	230 VAC	70
	MS4809F1012	FSNF230 US	Yes	On/Off	230 VAC	70
	MS7520A2015	FSAFB24-SR	Yes	2-10V, 4-20mA	24 VAC	180
	MS8104F1010	FSLF24 US	Yes	On/Off	24 VAC	30
	MS8104F1210	FSLF24 US	Yes	On/Off	24 VAC	30
	MS8109F1010	FSNF24 US	Yes	On/Off	24 VAC	70
	MS8109F1210	FSNF24-S US	Yes	On/Off	24 VAC	70
	MS8120F1002	FSAF24A	Yes	On/Off	24 VAC	180
	MS8120F1200	FSAF24A-S	Yes	On/Off	24 VAC	180
	MS8209F	FSNF24 US	Yes	On/Off	24 VAC	70
	MS8209F1003	FSNF24 US	Yes	On/Off	24 VAC	70
	MS8309F	FSNF24 US	Yes	On/Off	24 VAC	70
	MS8309F1001	FSNF24 US	Yes	On/Off	24 VAC	70
	S20230-F	FSAF230A	Yes	On/Off	230 VAC	180
	S20230-F-SW2	FSAF230A-S	Yes	On/Off	230 VAC	180
	S2024-F	FSAF24A	Yes	On/Off	24 VAC	180
	S2024-F-SW2	FSAF24A-S	Yes	On/Off	24 VAC	180
Auxiliary switch packages	32003532-002 Aux Switch Package	Use Belimo "-S" models	N/A	N/A	N/A	N/A

ECM	Call Belimo for assistance. Digital photographs of damper and old motor mounting will be needed. Generally replaced by FSLF for direct coupled and FSNF if linkages are needed. Motors were non-spring. Damper OEM external spring must be removed or disabled.
Prefco	Honeywell, 5800 EMB 2X and other models can easily be replaced if damper shaft is present. Call Belimo for more information. Refer to Multiproducts on page 27.
Modulating	Various models of Honeywell and other modulating can be replaced. FSAFB24-SR and FSAFB24-SR-S are available.
Pneumatic	Retrofit of pneumatic actuators with Belimo electronic ones will usually require some re-control also. Depending on age and manufacturer, the fusible links, fusible air valve, smoke control relays, or other components may have to be replaced or upgraded.

	Model	Belimo Replacement Model				
NOTES	**RUSKIN**	**BELIMO**	**Spring Return**	**Control Signal**	**Power Supply**	**Torque (in-lbs)**
The Ruskin/HW motors vary irregularly in torque. It is best to use damper size to select. < 4 sq.ft. use FSLF Series. > 4 sq.ft. use FSNF Series.	H-2000A/3 Low	FSLF120 US	Yes	On/Off	120 VAC	30
	H-2000A/6 Medium	FSNF120 US	Yes	On/Off	120 VAC	70
	H-2000A/8 High	FSNF120 US	Yes	On/Off	120 VAC	70
	H-2000B/3 Low	FSLF120 US	Yes	On/Off	120 VAC	30
	H-2000B/6 Medium	FSNF120 US	Yes	On/Off	120 VAC	70
	H-2000B/8 High	FSNF120 US	Yes	On/Off	120 VAC	70
	H-2024A/3 Low	FSLF24 US	Yes	On/Off	24 VAC	30
	H-2024A/6 Medium	FSNF24 US	Yes	On/Off	24 VAC	70
	H-2024A/8 High	FSNF24 US	Yes	On/Off	24 VAC	70
	H-2024B/3 Low	FSLF24 US	Yes	On/Off	24 VAC	30
	H-2024B/6 Medium	FSNF24 US	Yes	On/Off	24 VAC	70
	H-2024B/8 High	FSNF24 US	Yes	On/Off	24 VAC	70
	H-2230A/3 Low	FSLF230 US	Yes	On/Off	230 VAC	30
	H-2230A/6 Medium	FSNF230 US	Yes	On/Off	230 VAC	70
	H-2230A/8 High	FSNF230 US	Yes	On/Off	230 VAC	70
	H-2230B/3 Low	FSLF230 US	Yes	On/Off	230 VAC	30
	H-2230B/6 Medium	FSNF230 US	Yes	On/Off	230 VAC	70
	H-2230B/8 High	FSNF230 US	Yes	On/Off	230 VAC	70
	RH-24	FSNF24 US	Yes	On/Off	24 VAC	70
	RH-24-S	FSNF24-S US	Yes	On/Off	24 VAC	70
	RH-120	FSNF120 US	Yes	On/Off	120 VAC	70
	RH-120-S	FSNF120-S US	Yes	On/Off	120 VAC	70
	RH-24-MOD	FSAFB24-SR	Yes	2-10 VDC	24 VAC	180

	Model	Belimo Replacement Model			
NOTES- PHILLIPS P150	**RUSKIN**	**BELIMO**	**Spring Return**	**Power Supply**	**Torque**
Shaft spring must be disabled. See Ruskin with Phillips P150 at www.belimo.us/firesmoke Linkages and switch model available. Some used with Negator springs; if so, call for assistance. Use FSNF for dampers up to 12 sq.ft. Use FSNF*A for dampers up to 16 sq.ft	Phillips P150	See notes at left	Yes	On/Off	See notes at left

	Model	Belimo Replacement Model				
NOTES	**MULTIPRODUCTS**	**BELIMO**	**Spring Return**	**Control Signal**	**Power Supply**	**Torque (in-lbs)**
Greenheck. Typically these were linkaged using a crank arm on the square motor shaft and the spring was on the round shaft. Remove all linkage parts and direct couple to damper shaft.	2430	FSLF120 US if direct coupled. See notes 1, 2, 3 below	No	On/Off	120 VAC	30
Air Balance. Square shaft inserted into damper sleeve with special crankarm. If a smoke damper, replacement may be possible and requires a new shaft and other linkage parts. If a combination fire and smoke damper, it is possible Belimo cannot be used. Most dampers must be replaced.	2553A		No	On/Off	120 VAC	30
Greenheck. Typically these were linkaged using a crank arm on the square motor shaft and the spring was on the round shaft. Remove all linkage parts and direct couple to damper shaft.	2585, 2586		No	On/Off	120 VAC	30
Safe-Air / Imperial. Typically linkaged. There was an internal spring and fusible link for the fire function.	2659		No	On/Off	120 VAC	30
Air Balance. FSLF < 3 sq.ft.; FSNF 3 to 8 sq.ft. Remove old motor and external spring. Belimo mounts on shaft without linkages. Use old motor as a mounting platform for anti-rotation strap.	2724		No	On/Off	120 VAC	30
Ruskin. FSLF120/MP Kit available from Ruskin Reps. See instructions for negator spring removal. Some dampers will need fusible link replaced and thermal sensor installed.	2781 or 1161B		No	On/Off	24/120 VAC	30
Ruskin. 10 in-lb. "A" model = CW rotation; plain = CCW. Check voltage. FSLF replaces both in most cases. Use FSTF when linkages necessary.	2814A-SQ		No	On/Off	120 VAC	30
Depends on specific geometry of installation. All FSTF & FSNF parts can be used. Inside clamp mounting or a shaft extension required. Inside clamp mounting or a shaft extension may be required.	2920		No	On/Off	120 VAC	30
Greenheck.Typically these were linkaged using a crank arm on the square shaft and the spring was on the round shaft. Remove all linkage parts and direct couple to damper shaft. (Model difference is CW vs. CCW.)	2985, 2986		No	On/Off	120 VAC	30
Greenheck. Some were direct coupled to the damper shaft with an external spring. Some were linkaged using a crank arm on the square motor shaft and the spring was on the round shaft. Remove all linkage parts and direct couple to damper shaft. (Model difference is CW vs. CCW.)	3158, 3159		No	On/Off	120 VAC	30
Prefco. Outside the duct, 1 is top mount, power open. 10 is bottom mount, power closed. Review of linkages, springs, fusible link or McCabeLink© must be performed. Power closed typically used in smoke control systems so switches may be needed.	5800EMB1,10		No	On/Off	120 VAC	30
Prefco. Review of linkages, springs, fusible link or McCabeLink© must be performed.	5800EMB2XPC, PO, 5800EMB8, 9		No	On/Off	120 VAC	30
Prefco. Inside the duct, 5 is top mount, power open. 7 is bottom mount, power closed. Review of linkages, springs, fusible link or McCabeLink© must be performed. Power closed typically used in smoke control systems so switches may be needed.	5800EMB5, 7		No	On/Off	120 VAC	30
Nailor. Remove linkage parts and mount to damper shaft. FSLF for dampers < 4 sq.ft. and FSNF for dameprs > 4 sq.ft.	6247		No	On/Off	120 VAC	30
	MZRHM		No	On/Off	120 VAC	30
Greenheck and others. Typically these were linkaged using a crank arm on the square motor shaft and the spring was on the round shaft. Remove all linkage parts and direct couple to damper shaft.	TB2001, TSB2000		No	On/Off	120 VAC	30

1. In general, use FSLF If a shaft is available for direct coupling and damper is < 4 sq.ft. Use FSNF and ZG-AF US or other linkage if linkage is necessary and damper is > 4 sq.ft.. Use FSTF if damper < 1.5 sq.ft. Linkage or direct couple.

2. Note that in almost all cases the old linkage, spring, and motor can be removed and mounting Belimo to the shaft is the accepted procedure to make the assembly conform to modern fire & smoke dampers.

3. Investigation of each application is necessary. Check voltage and breakers. In all cases disconnect external motor spring without compromising fusible link and internal spring ability to close the blades. These are quite old and changes may have been made by others over the years. Check fusible links or McCabe© Link. Verify damper functions after replacement by testing damper open and spring closed.

Siemens and Siebe to Belimo

Fire and Smoke Actuator Replacement Cross Reference

	Model	Belimo Replacement Model				
NOTES	SIEMENS*	BELIMO	Spring Return	Control Signal	Power Supply	Torque (in-lbs)
	GGD121.1U	FSAF24A	Yes	On/Off	24 VAC	180
	GGD121.3U	FSAF24A	Yes	On/Off	24 VAC	180
	GGD221.1U	FSAF120A	Yes	On/Off	120 VAC	180
	GGD221.3U	FSAF120A	Yes	On/Off	120 VAC	180
	GGD321.1U	FSAF230A	Yes	On/Off	230 VAC	180
	GND12x.1x	FSLF24 US	Yes	On/Off	24 VAC	30
	GND22x.1x	FSLF120 US	Yes	On/Off	120 VAC	30
	GND32x.1x	FSLF230 US	Yes	On/Off	230 VAC	30
This is a 165ºF thermal sensor. Call for information.	ASK79.165	BAE165 US				

* While drive torque of Siemens is 142 in-lbs, spring torque is 110 in-lbs. Belimo has passed UL555S at 12 sq.ft.

	Model	Belimo Replacement Model				
NOTES	SIEBE	BELIMO	Spring Return	Control Signal	Power Supply	Damper Size
	MA220	FSLF120 US	Yes	On/Off	120 VAC	For <4 sq. ft. dampers use FSLF Series For >4 sq. ft. use FSNF Series
	MA221	FSLF230 US	Yes	On/Off	240 VAC	
	MA223	FSLF24 US	Yes	On/Off	24 VAC	
Where linkages are needed, use FSNF. Timing is a function of damper spring.	MA230	FSNF120 US	Yes	On/Off	120 VAC	
	MA231	FSNF230 US	Yes	On/Off	240 VAC	
When replacing the actuator, remove the old spring from the damper.	MA233	FSNF24 US	Yes	On/Off	24 VAC	
	MA240	Call Belimo	Yes	On/Off	120 VAC	
If the damper has one spring, add a new electric thermal sensor. (Belimo BAE 165)	MA250	FSNF120 US	Yes	On/Off	120 VAC	
	MA251	FSNF230 US	Yes	On/Off	230 VAC	
A -500 part number indicates an auxiliary switch. Replace with a Belimo "-S" version.	MA253	FSNF24 US	Yes	On/Off	24 VAC	
	MA-318	FSNF24 US	Yes	On/Off	24 VAC	
	MA-318-500	FSNF24 -S US	Yes	On/Off	24 VAC	
	MA-418	FSNF120 US	Yes	On/Off	120 VAC	
	MA-418-500	FSNF120-S US	Yes	On/Off	120 VAC	<4 sq.ft use FSLF >4.sq.ft. use FSNF

Qualifications for Belimo in Replacing Defective Competitive Actuators

Belimo is UL 555S Listed with all damper manufacturers. In addition, all Belimo Fire and Smoke actuators have passed UL 2043 in accordance to requirements of the NEC 300.22 (c) and the IMC 602 for use in plenums. The basic UL listings are either UL 873 or UL 60730 which has supplanted UL 873. UL 873 has been grandfathered.

Infrequently, the fire alarm standard, UL 864, and list of qualified smoke control systems, UUKL, are specified. UL has clearly stated that it will not investigate dampers or actuators in accordance with these standards and that UL 555 (fire) and UL 555S (smoke) are the only correct standards.

UL has stated that while field replacement of actuators is allowed, the local AHJ is in charge; UL does not regulate field repairs. NFPA 80 (fire) & NFPA 105 (smoke) are the standards referenced by the IBC which regulate replacement and repair.

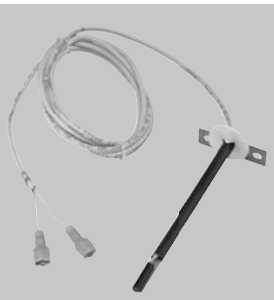
Visit www.belimo.us/firesmoke for detailed instructions for each damper manufacturer.

Economizer Retrofit Solutions

Airside economizers provide the correct ratio of outside air and return air to deliver proper indoor air quality (IAQ) to meet codes; many economizer systems are not accomplishing these goals. Belimo offers a drop-in economizer replacement solution. The Belimo ZIP Packs provide a packaged solution for selection and simple retrofitting of non-functioning energy wasting economizers. The ZIP Economizer has built-in all the relevant climate zone and energy code data, by entering in your ZIP code you automatically maximize energy savings for your location. The packs are in one box with a single part number. ZIP Packs include the ZIP Economizer, air sensors, energy module for Demand Control Ventilation (DCV) integration, spring return actuator, and retrofit hardware backed with a 5-year warranty. The ZIP Packs can get systems back on track and meets compliance criteria with the latest energy codes, standards, and IAQ requirements.

ECON-ZIP BASE

AND



ECON-ZIP-10K
(Supply Air Sensor)

Economizer Base

TFB24-SR
up to 7.5 Tons

LF24-SR
7.5-12 Tons

NFB24-SR
12-15 Tons

AFB24-SR
15-30 Tons

Select Actuator

DRY BULB

ECON-ZIP-10K

OR

ENTHALPY

ECON-ZIP-TH

Note: Differential control requires one additional sensor for return air.

Select High Limit Changeover Sensors

Optional Add-On Modules

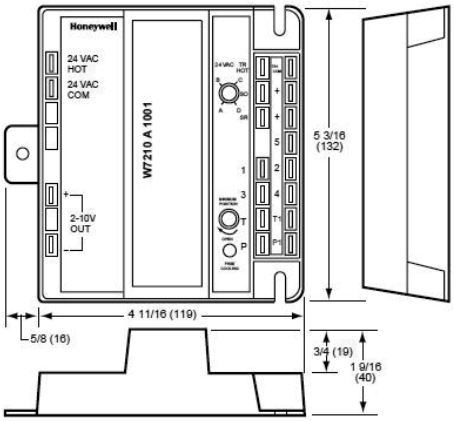
- **Demand Control Ventilation (DCV)* - ECON-ZIP-EM + CO2 sensor of your choice (0-2000PPM, 0-10VDC).**
- **Preoccupancy Purge* - ECON-ZIP-EM Requires thermostat with purge setting and contacts.**
- **Remote Damper Override - ECON-ZIP-EM + SGA24**
- **Exhaust Fan - ECON-ZIP-EM**
- **Remote Alarm Notification* - ECON-ZIP-COM**
- **Required for BACnet MS/TP communication**

*** May be required by local codes**

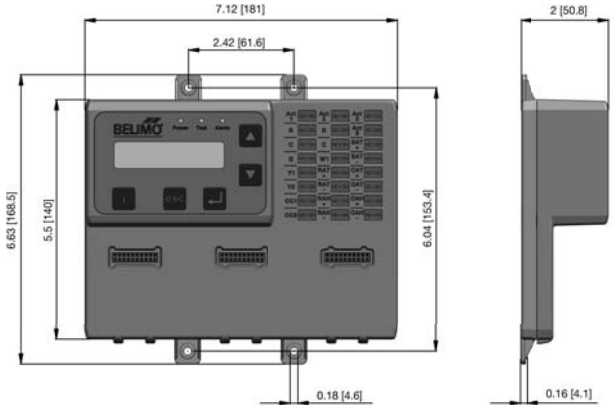
Honeywell W7210

Belimo ZIP Economizer

Dimensions (Inches [mm])



Dimensions (Inches [mm])



W7210 WIRE TERMINATION	ZIP ECONOMIZER WIRE TERMINATION
1	Y1
2	CC1
3	Y2
4	CC2
5	NA
TR	R
TR1	C
ST6008 OCC Timer	G
P-P1	AUX2 Located on ECON-ZIP-EM
T-T1	Supply Air – New Sensor
So-So+	Outside Air- New Sensor
Sr-Sr+	New Sensors
+	ACT3
-	ACT1
24 VAC HOT	ACT2
	ACT5

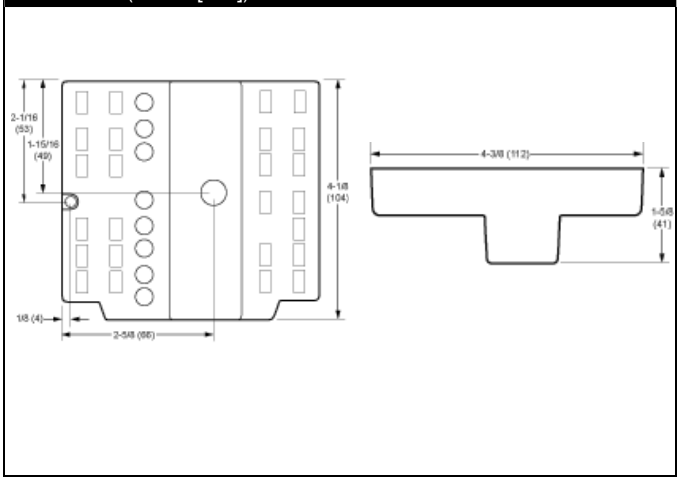
Honeywell to Belimo

Economizer Replacement Cross Reference

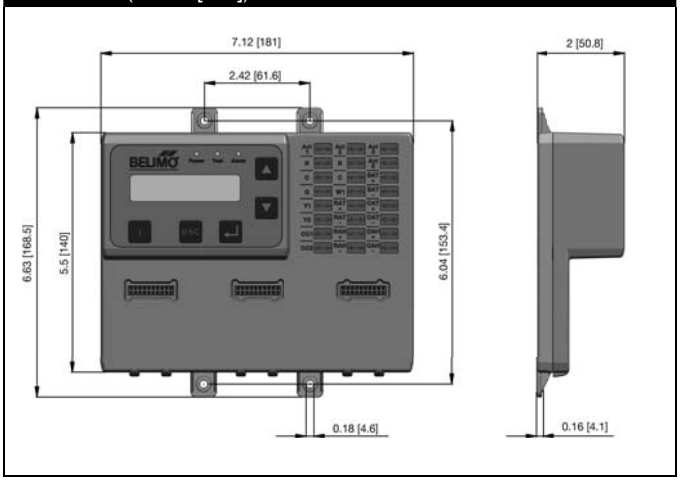
Honeywell W7212

Belimo ZIP Economizer

Dimensions (Inches [mm])



Dimensions (Inches [mm])



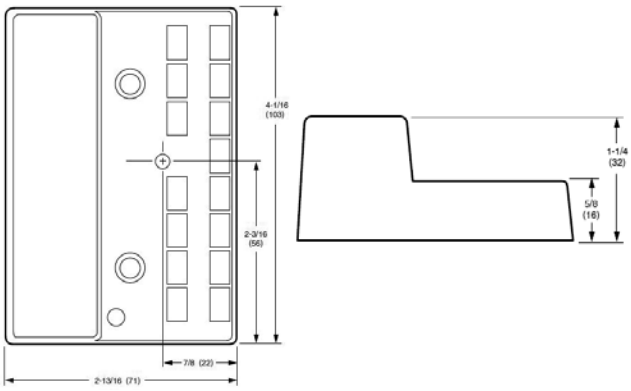
W7212 WIRE TERMINATION	ZIP ECONOMIZER WIRE TERMINATION
1	Y1
2	CC1
3	Y2
4	CC2
5	NA
TR	R
TR1	C
N	G
P-P1	AUX2 Located on ECON-ZIP-EM
T-T1	Supply Air – New Sensor
So-So+	Outside Air- New Sensor
	New Sensors
AQ-AQ1	C02 +/-
EF-EF1	EF*

*EF, EFH1 provide 24 VAC out. Interposing relay or contactor may be needed for exhaust fan control. Verify with RTU wiring.

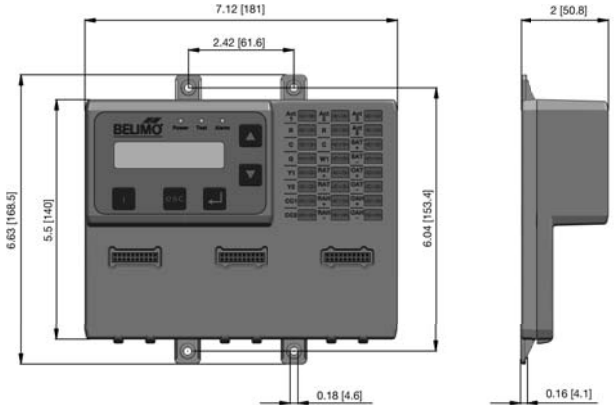
Honeywell W7459

Belimo ZIP Economizer

Dimensions (Inches [mm])



Dimensions (Inches [mm])



W7459 WIRE TERMINATION	ZIP ECONOMIZER WIRE TERMINATION
1	Y1
2	CC1
3	Y2
4	CC2
5	NA
TR	R
TR1	C
N	G
P-P1	AUX2 Located on ECON-ZIP-EM
T-T1	Supply Air - New Sensor
So-So+	Outside Air - New Sensor
Sr-Sr+	New Sensors

BELIMO RETROFIT KITS

Part Number	Description	Components (# included in kit)
ECON-ZIP-ACT	Actuator Shaft Adapter allows easy retrofit from Honeywell® black box motors (M7XXX) to Belimo spring return actuator.	Shaft, M4x8 Screws (4), Locking Nuts (4)
ECON-ZIP-LF1	Bracket with hole patterns to mount the LF Series actuator, horizontal or vertical position to meet space requirements.	ECON-ZIP-ACT, ZG-112, Screws
ECON-ZIP-TF1	Bracket with hole patterns to mount the TF Series actuator, horizontal or vertical position to meet space requirements.	ECON-ZIP-ACT, ZG-113, Spacers and Screws

BELIMO ZIP PACK

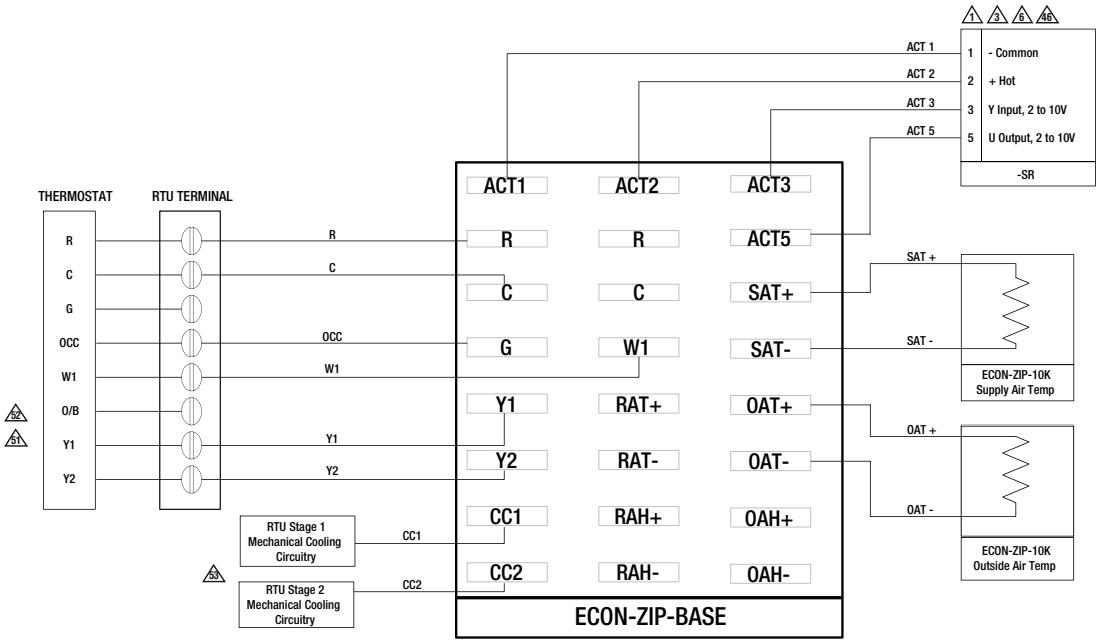
Part Number	Description	Components (# included in kit)
ECON-ZIP-SDTF	Single Dry Bulb with DCV Capability and TF Spring Return Actuator (22 in-lbs)	ECON-ZIP-Base, ECON-ZIP-EM, ECON-ZIP-10K (2), TFB24-SR, ECON-ZIP-TF1
ECON-ZIP-DDTF	Differential Dry Bulb with DCV Capability and TF Spring Return Actuator (22 in-lbs)	ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K (3), TFB24-SR, ECON-ZIP-TF1
ECON-ZIP-SETF	Single Enthalpy with DCV Capability and TF Spring Return Actuator (22 in-lbs)	ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K, ECON-ZIP-TH, TFB24-SR, ECON-ZIP-TF1
ECON-ZIP-SDLF	Single Dry Bulb with DCV Capability and LF Spring Return Actuator (35 in-lbs)	ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K (2), LF24-SR US, ECON-ZIP-LF1
ECON-ZIP-DDLF	Differential Dry Bulb with DCV Capability and LF Spring Return Actuator (35 in-lbs)	ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-10K (3), LF24-SR US, ECON-ZIP-LF1
ECON-ZIP-SELF	Single Enthalpy with DCV Capability and LF Spring Return Actuator (35 in-lbs)	ECON-ZIP-BASE, ECON-ZIP-EM, ECON-ZIP-TH, ECON-ZIP-10K, LF24-SR US, ECON-ZIP-LF1

HONEYWELL Y PACK / BELIMO ZIP PACK

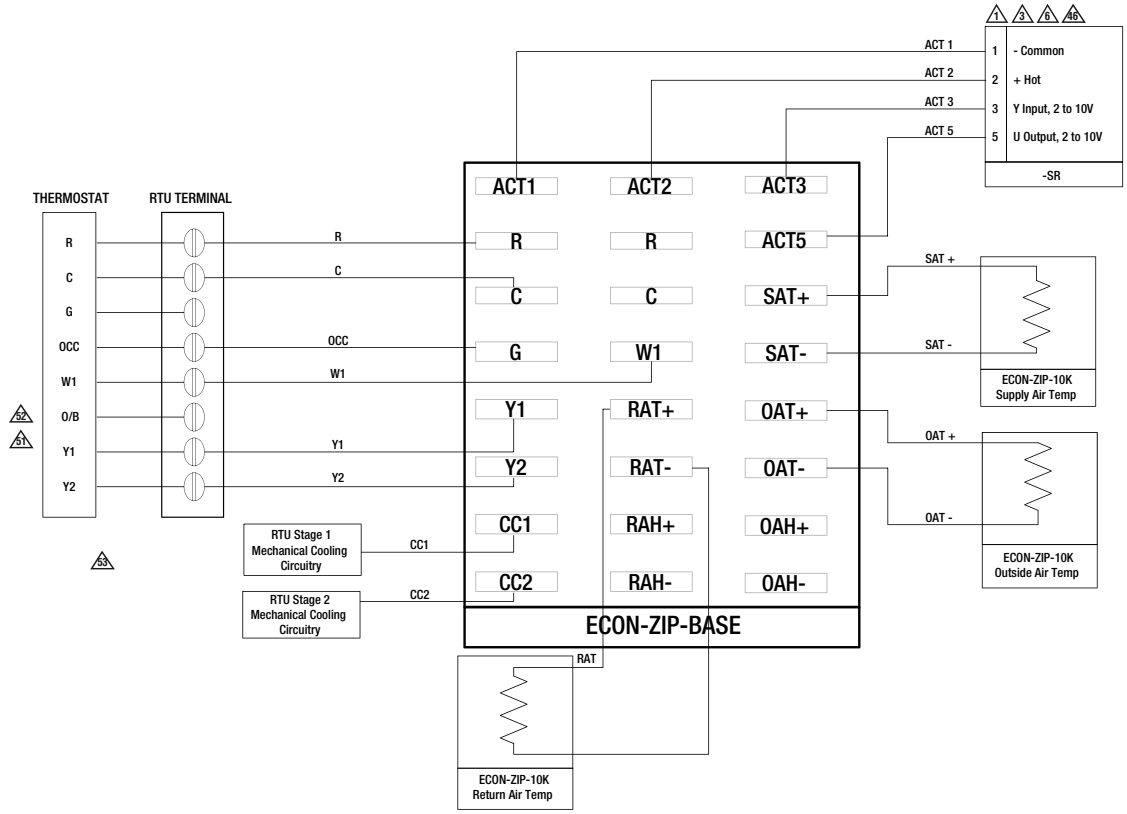
Part Number	Description	Part Number	Description
Y7220A7215	Dry Bulb with black motor	ECON-ZIP-SDTF	Single Dry Bulb with DCV Capability, 22 in-lbs
YL7220A7503	Dry Bulb with non-communicating DCA	ECON-ZIP-SDTF	Single Dry Bulb with DCV Capability, 22 in-lbs
YL7220AJ3103	Dry Bulb with communicating 27 in-lbs DCA	ECON-ZIP-SDTF*	Single Dry Bulb with DCV Capability, 22 in-lbs
YL7220AJ3105	Dry Bulb with communicating 44 in-lbs DCA	ECON-ZIP-SDLF*	Single Dry Bulb with DCV Capability, 35 in-lbs
Y7220S7215	Enthalpy with black motor	ECON-ZIP-SETF	Single Enthalpy with DCV Capability, 22 in-lbs
YL7220S7503	Enthalpy with non-communicating DCA	ECON-ZIP-SETF	Single Enthalpy with DCV Capability, 22 in-lbs
YL7220SJ3103	Enthalpy with communicating 27 in-lbs DCA	ECON-ZIP-SETF*	Single Enthalpy with DCV Capability, 22 in-lbs
YL7220SJ3105	Enthalpy with communicating 44 in-lbs DCA	ECON-ZIP-SELF*	Single Enthalpy with DCV Capability, 35 in-lbs

*May be a lower torque cross, but acceptable for damper.

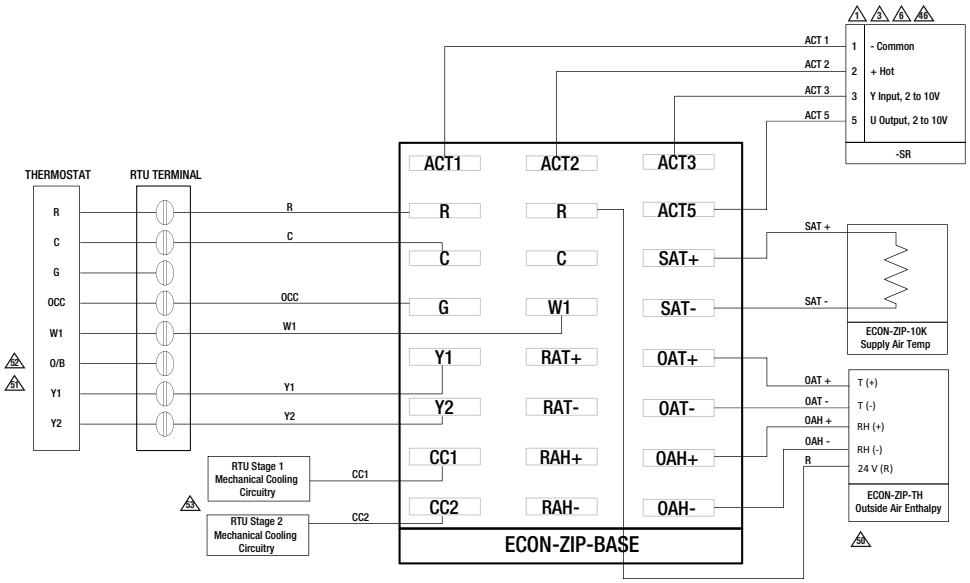
Single Dry Bulb



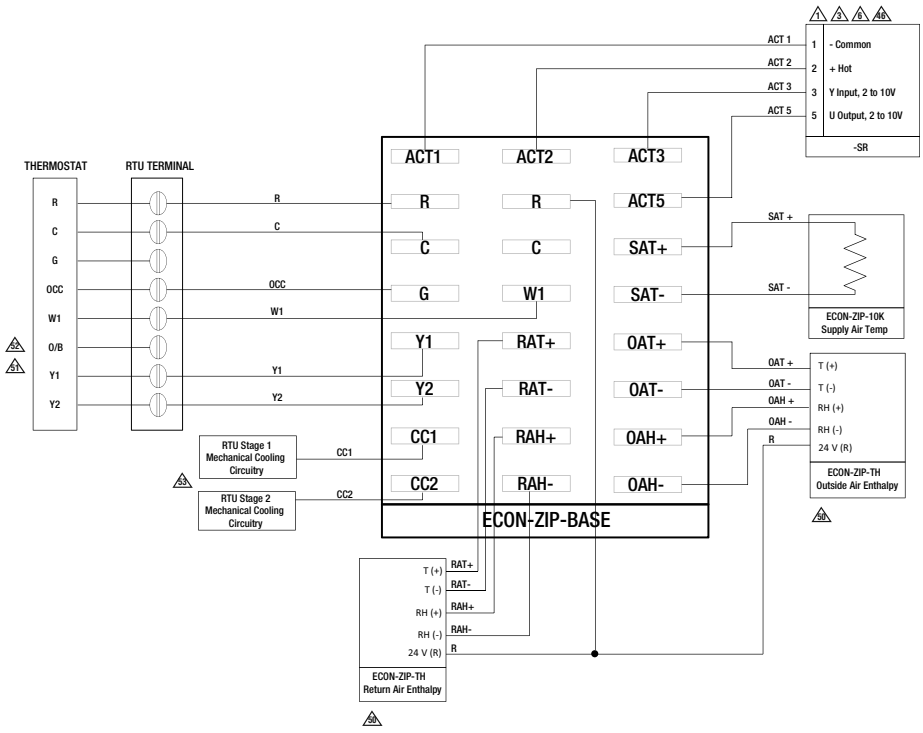
Differential Dry Bulb



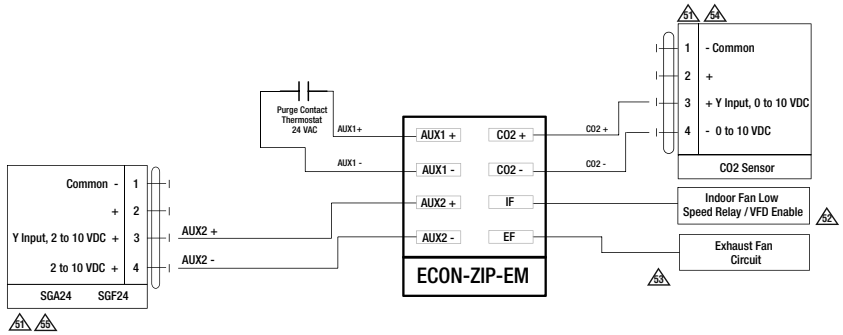
Single Enthalpy



Differential Enthalpy



ECON-ZIP-EM



Zone Valve Replacement Solutions

Belimo zone valve retrofit solutions are designed to replace failed or non-functioning valves used in a variety of applications. Belimo offers a full product range of zone valves. The self-cleaning ball design helps minimize energy losses caused by clogging and eliminates overflow from pump pressure seat lift. Also offering high close-off capabilities allow for true equal percentage flow characteristics. Zone valves are suited for commercial applications where higher close-off is required such as fin tube casing, fan coils, radiant panels and duct coils.

5 YEAR WARRANTY

Zone Valve Replacement Solutions

Belimo to Belimo

BELIMO

ZONE VALVES*

DISCONTINUED MODEL	Size	C_V Rating	Close-off (psi)	REPLACEMENT MODEL	Size	C_V Rating	Close-off (psi)
Z214T+SEF24 NO	½"	2.3	43.5	ZONE215N-10+ZONE24NO ZONE215N-25+ZONE24NO	½"	1 2.5	75 50
Z215T+SEF24 NO	½"	3.7	30	ZONE215N-35+ZONE24NO	½"	3.5	30
Z220T+SEF24 NO	¾"	3.7	30	ZONE220N-35+ZONE24NO ZONE220N-50+ZONE24NO	¾"	3.5 5	30
Z214T+SEF120 NO	½"	2.3	43.5	ZONE215N-10+ZONE120NO ZONE215N-25+ZONE120NO	½"	1 2.5	75
Z215T+SEF120 NO	½"	3.7	30	ZONE215N-35+ZONE120NO	½"	3.5	30
Z220T+SEF120 NO	¾"	3.7	30	ZONE220N-35+ZONE120NO ZONE220N-50+ZONE120NO	¾"	3.5 5	30 25
Z214T+SEF24 NC	½"	2.3	43.5	ZONE215N-10+ZONE24NC ZONE215N-25+ZONE24NC	½"	1 2.5	75 50
Z215T+SEF24 NC	½"	3.7	30	ZONE215N-35+ZONE24NC	½"	3.5	30
Z220T+SEF24 NC	¾"	3.7	30	ZONE220N-35+ZONE24NC ZONE220N-50+ZONE24NC	¾"	3.5 5	30 25
Z214T+SEF120 NC	½"	2.3	43.5	ZONE215N-10+ZONE120NC ZONE215N-25+ZONE120NC	½"	1 2.5	75 50
Z215T+SEF120 NC	½"	3.7	30	ZONE215N-35+ZONE120NC	½"	3.5	30
Z220T+SEF120 NC	¾"	3.7	30	ZONE220N-35+ZONE120NC ZONE220N-50+ZONE120NC	¾"	3.5 5	30 25
Z214T+SEF24 NC	½"	2.3	43.5	ZONE215N-10+ZONE24NC ZONE215N-25+ZONE24NC	½"	1 2.5	75 50
Z215T+SEF24 NC	½"	3.7	30	ZONE215N-35+ZONE24NC	½"	3.5	30
Z220T+SEF24 NC	¾"	3.7	30	ZONE220N-35+ZONE24NC ZONE220N-50+ZONE24NC	¾"	3.5 5	30 25
Z214T+SEF120 NC	½"	2.3	43.5	ZONE215N-10+ZONE120NC ZONE215N-25+ZONE120NC	½"	1 2.5	75 50
Z215T+SEF120 NC	½"	3.7	30	ZONE215N-35+ZONE120NC	½"	3.5	30
Z220T+SEF120 NC	¾"	3.7	30	ZONE220N-35+ZONE120NC ZONE220N-50+ZONE120NC	¾"	3.5 5	30 25
Z315T+SEF24 NC	½"	5	30	ZONE315N-10+ZONE24NC ZONE315N-25+ZONE24NC ZONE315N-35+ZONE24NC	½"	1 2.5 3.5	75 50 30
Z315T+SEF120 NC	½"	5	30	ZONE315N-10+ZONE120NC ZONE315N-25+ZONE120NC ZONE315N-35+ZONE120NC	½"	1 2.5 3.5	75 50 30
Z320T+SEF24 NC	¾"	5.4	30	ZONE320N-35+ZONE24NC ZONE320N-50+ZONE24NC	¾"	3.5 5	30 25
Z320T+SEF120 NC	¾"	5.4	30	ZONE320N-35+ZONE120NC ZONE320N-50+ZONE120NC	¾"	3.5 5	30 25
Z814T+SEF24 NO	½"	2.3	43.5	ZONE215S-10+ZONE24NC ZONE215S-25+ZONE24NC	½"	1 2.5	75 50
Z815T+SEF24 NO	½"	3.7	30	ZONE215S-35+ZONE24NO	½"	3.5	30
Z820T+SEF24 NO	¾"	3.7	30	ZONE220S-35+ZONE24NO ZONE220S-50+ZONE24NO	¾"	3.5 5	30 25
Z814T+SEF120 NO	½"	2.3	43.5	ZONE215S-10+ZONE120NO ZONE215S-25+ZONE120NO	½"	1 2.5	75 50
Z815T+SEF120 NO	½"	3.7	30	ZONE215S-35+ZONE120NO	½"	3.5	30
Z820T+SEF120 NO	¾"	3.7	30	ZONE220S-35+ZONE120NO ZONE220S-50+ZONE120NO	¾"	3.5 5	30 25
Z814T+SEF24 NC	½"	2.3	43.5	ZONE215S-10+ZONE24NC ZONE215S-25+ZONE24NC	½"	1 2.5	75 50
Z815T+SEF24 NC	½"	3.7	30	ZONE215S-35+ZONE24NC	½"	3.5	30
Z820T+SEF24 NC	¾"	3.7	30	ZONE220S-35+ZONE24NC ZONE220S-50+ZONE24NC	¾"	3.5 5	30 25
Z814T+SEF120 NC	½"	2.3	43.5	ZONE215S-10+ZONE120NC ZONE215S-25+ZONE120NC	½"	1 2.5	75 50
Z815T+SEF120 NC	½"	3.7	30	ZONE215S-35+ZONE120NC	½"	3.5	30
Z820T+SEF120 NC	¾"	3.7	30	ZONE220S-35+ZONE120NC ZONE220S-50+ZONE120NC	¾"	3.5 5	30 25
Z915T+SEF24 NC	½"	5	30	ZONE315S-10+ZONE24NC ZONE315S-25+ZONE24NC ZONE315S-35+ZONE24NC	½"	1 2.5 3.5	75 50 30
Z915T+SEF120 NC	½"	5	30	ZONE315S-10+ZONE120NC ZONE315S-25+ZONE120NC ZONE315S-35+ZONE120NC	½"	1 2.5 3.5	75 50 30
Z920T+SEF24 NC	¾"	5.4	30	ZONE320S-35+ZONE24NC ZONE320S-50+ZONE24NC	¾"	3.5 5	30 25
Z920T+SEF120 NC	¾"	5.4	30	ZONE320S-35+ZONE120NC ZONE320S-50+ZONE120NC	¾"	3.5 5	30 25

*The recommended replacements must be considered depending on the C_V rating and Close-off requirement involving your application.

Globe Valve Retrofit Solutions

Globe valve retrofit solutions are designed to easily attach to the valve bonnet and stem of other manufacturers globe valves utilizing Belimo actuators. Actuator and linkages restore service without having to remove the valve saving on down time and costs.

5 YEAR WARRANTY

How to Select a Globe Valve Retrofit Solution

Follow the four steps listed below when ordering a globe valve retrofit kit for either UGLK or GVL series linkages.

Example: Siemens 658 series, **1¼"** valve, needing **200 psi** close-off pressure and **Fail-Safe** actuation.

1 Based on the **Valve Number, Configuration** and **Size**, select the proper linkage or linkages for your valve.

Some valves will have more than one linkage offered, use the actuator or combination pages to determine the appropriate linkage for a given application. In this example there is a **UGLK1214, UGLK1350** and a **UGVL** series linkage available.

2 Use the selection guide and your close-off pressure requirement to select the correct actuator series for your application. Looking at the **UGLK1350** there are no fail-safe actuators that will achieve 200 psi close-off for 1¼" valve. Looking at the **UGLK1214** or **UGVL,** the **AF** or **SVK** Series actuator will provide over **200 psi close-off** for the **1¼" valve**.

3 Use the actuator listings to make your final actuator selection.

4 HOW TO ORDER:

Option One:
Item 1 1pc UGLK1214
Item 2 1pc AFB24-MFT

Option Two:
Item 1 1pc UGVL + SVKB24-MFT

5 YEAR WARRANTY

1 Select linkage solution based on the **Valve Number**, **Configuration**, and **Size**; select the proper **Linkage Solution** for your valve.

Siemens\Landis\Powers

658 Series Valves
Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Fail-safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
658 Series	2-way	1¼"	No	78	LM	**UGLK1350**
				156	NM	**UGLK1350**
				236	SV	**UGVL**
				250	AM	**UGLK1214**
			Yes	61	LF	**UGLK1350**
				156	NF	**UGLK1214**
				236	SVK	**UGVL**
				250	AF	**UGLK1214**

Example: **Siemens Series #658, 2-Way, 1¼"** valve to be retrofitted.

Choose correct kit **UGLK1214** or **UGVL**.

2 Verify close-off is suitable for application. Looking at the **UGLK or UGVL**, the **AF and SVK** Series actuator will provide **200 psi close-off** for the **1¼" valve**.

3 Select actuator based on needed control type. Decide between **AFB24, AFB24-MFT**

or **SVKX24-3, SVKB24-MFT**.
Consult actuator overview section for full details.

BASIC PRODUCTS

Model	Control Input	Feedback	Power Supply	Running Time(s)		VA Rating	Auxiliary Switch
				Ⓜ	♦♦		
AFB24	On/Off	-	24 VAC/DC	<75 seconds	20 secs	7.5	-
AFB24-S	On/Off	-	24 VAC/DC	<75 seconds	20 secs	7.5	Built-In
AFBUP	On/Off	-	24-240 VAC	<75 seconds	20 secs	8.5	-
AFBUP-S	On/Off	-	24-240 VAC	<75 seconds	20 secs	8.5	Built-In
AFB24-SR	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	95 seconds	<20 secs	8.5	-
AFB24-SR-S	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	95 seconds	<20 secs	8.5	Built-In
AFB24-PC	0-10 V Phasecut	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-
AFB24-MFT	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-
AFB24-MFT-S	2-10 VDC (4-20mA)	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	Built-In
AFB24-MFT95	0 to 135	2-10 VDC	24 VAC/DC	150 seconds	<20 secs	10	-

4 Complete Ordering Example Option One:
Item 1: **UGLK1214**
Item 2: **AFB24-MFT**

4 Complete Ordering Example Option Two:
Item 1: **UGVL + SVKB24-MFT**

ACTUATOR PART #		LVKX24-3	LVKB24-SR	LVKB24-MFT	SVKX24-3	SVKB24-SR	SVKB24-MFT
Control type		On/Off, Floating Point	Modulating	Modulating/MFT	On/Off, Floating Point	Modulating	Modulating/MFT
Input signal / Feedback		-	2-10 VDC	Variable	-	2-10 VDC	Variable
Running time	Motor	150 seconds	150 seconds	Variable	150 seconds	150 seconds	Variable
	Fail-Safe	35 seconds	35 seconds	35 seconds	35 seconds	35 seconds	35 seconds
Actuator travel		24mm	24mm	24mm	24mm	24mm	24mm
Actuator noise level		<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)	<45 dB(A)
GVL LINKAGES							
UGVL	Universal Adjustable for 1/2" to 2"	$	$	$	$	$	$
SGVL	Schnieder VB7..., VB9...	$	$	$	$	$	$

ROTARY ACTUATORS SUGGESTION

SERIES	TORQUE	MODEL	Spring Return	Electronic Fail-Safe	Tandem Mounting Avail.	Control Input	Feedback Position	Power Supply	Standard Running Time
LF Series*	35 in-lbs [4 Nm]	LF24 US	•			On/Off	-	24 VAC/DC	Consult Specifications
		LF24-MFT US	•			Variable with MFT**	variable VDC	24 VAC/DC	
NF Series*	90 in-lbs [10 Nm]	NFBUP-X1	•			On/Off	-	24-240 VAC	
		NFX24-MFT-X1	•			(24 VAC/DC) Variable with MFT**	variable VDC	24 VAC/DC	
AF Series*	180 in-lbs [20 Nm]	AFBUP-X1	•		•	On/Off	-	24-240 VAC	
		AFX24-MFT-X1	•		•	Variable with MFT**	variable VDC	24 VAC/DC	
LM Series*	45 in-lbs [5 Nm]	LMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
		LMX24-MFT-X1				Variable with MFT**	variable VDC	24 VAC/DC	
NM Series*	90 in-lbs [10 Nm]	NMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
		NMX24-MFT-X1				Variable with MFT**	variable VDC	24 VAC/DC	
AM Series*	180 in-lbs [20 Nm]	AMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC	
		AMX24-MFT-X1				Variable with MFT**	variable VDC	24 VAC/DC	
GM Series*	360 in-lbs [40 Nm]	GMB24-3-X1			•	Floating Point, On/Off	-	24 VAC/DC	
		GMX24-MFT-X1			•	Variable with MFT**	variable VDC	24 VAC/DC	
GK Series*	360 in-lbs [40 Nm]	GKB24-3-X1		•		Floating Point, On/Off	-	24 VAC	
		GKX24-MFT-X1		•	•	Variable with MFT**	variable VDC	24 VAC/DC	

*Please consult the damper actuator sections for a full list of product offerings. Standard run times should be considered in the selection. All airside products are applicable for retrofit kits. Select "X1" actuators come with a handle.

** Variable with MFT includes VDC, PWM, Floating Point, On/Off

LINEAR ACTUATORS**

SERIES	MODEL	Fail-Safe	Control Input	Feedback Position	Power Supply	Standard Running Time*	Force
LV Series	LVB24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	112 lbf
	LVX120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	112 lbf
	LVBSR-SR	No	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	112 lbf
	LVX24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	112 lbf
LVK Series	LVKX24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	112 lbf
	LVKX120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	112 lbf
	LVKBSR-SR	Yes	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	112 lbf
	LVKX24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	112 lbf
SV Series	SVX24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	337 lbf
	SVX120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	337 lbf
	SVBSR-SR	No	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	337 lbf
	SVX24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	337 lbf
SVK Series	SVKX24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	337 lbf
	SVKX120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	337 lbf
	SVKBSR-SR	Yes	2-10 VDC	2-10 VDC	24 VAC/DC	90 seconds	337 lbf
	SVKX24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	337 lbf
AVK Series	AVKB24-3	Yes	Floating Pt., On/Off	N/A	24 VAC	90 seconds	450 lbf
	AVKB120-3	Yes	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	450 lbf
	AVKB24-MFT	Yes	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	450 lbf
EV Series	EVB24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	562 lbf
	EVB120-3	No	Floating Pt., On/Off	N/A	120-240 VAC	90 seconds	562 lbf
	EVB24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	562 lbf
RV Series	RVB24-3	No	Floating Pt., On/Off	N/A	24 VAC/DC	90 seconds	1011 lbf
	RVB24-MFT	No	Variable with MFT	Variable VDC	24 VAC/DC	90 seconds	1011 lbf

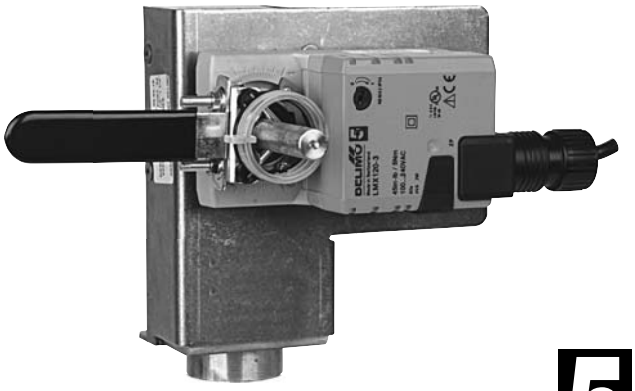
* Other speeds available on request. ** Sold as an assembly with linkage.

MULTI-FUNCTION TECHNOLOGY

PROGRAMMING CODE			Control Input	Running Time	Built-in Feedback
ROTARY ACTUATOR	P-10001	A01	2-10 VDC	150 seconds	2-10 VDC
	P-10002	A02	0.5-10 VDC	150 seconds	0.5-10 VDC
	P-10028	A28	0.5-10 VDC	150 seconds	0.5-10 VDC
	P-10063	A63	0.5-4.5 VDC	150 seconds	0.5-4.5 VDC
	P-10064	A64	5.5-10 VDC	150 seconds	5.5-10 VDC
	P-20002	W02	0.02-5.00 seconds PWM	150 seconds	2-10 VDC
	P-20003	W03	0.10-25.5 seconds PWM	150 seconds	2-10 VDC
	P-30001	F01	Floating Point	150 seconds	2-10 VDC
	P-40002	J02	On/Off	150 seconds	2-10 VDC
LINEAR ACTUATOR	G43		2-10 VDC	90 seconds	2-10 VDC
	G53		0.5-10 VDC	90 seconds	0.5-10 VDC
	W3M		0.02-5.00 seconds PWM	90 seconds	2-10 VDC
	G13		Floating Point	90 seconds	2-10 VDC
	G03		On/Off	90 seconds	2-10 VDC

UGLK.../UGSP... Retrofit Linkage for Globe Valves

For LM and LF Series Actuators



5 YEAR WARRANTY

Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing Belimo LM and LF series actuators. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select the actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. With the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuator can be flipped or the directional switch turned to a new rotation. The compact design allows for installation in tight spaces.

Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	½" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 50 psi
Weight	2.8 lbs [1.3 kg]

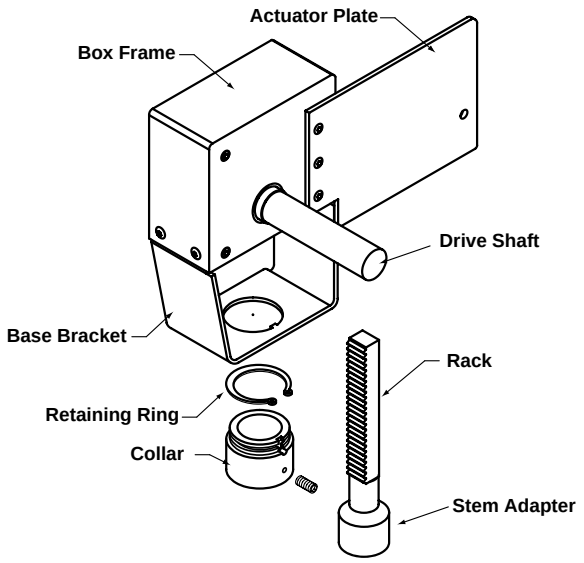
Suitable Actuators	Close-Off Ranges
LM Series	2-250 psi
LF Series	22-250 psi

Competitor Valves**

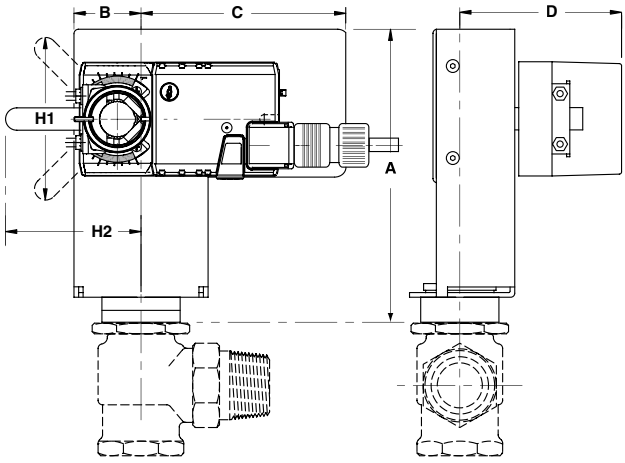
Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

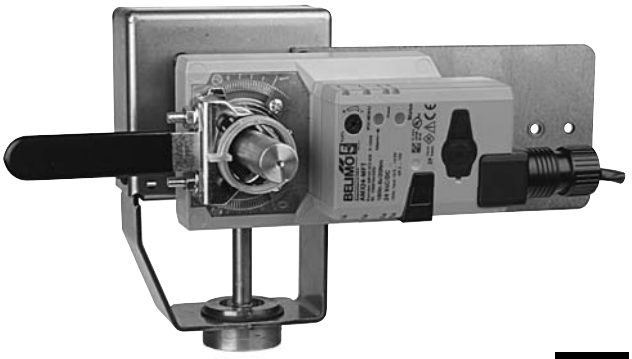
UGLK / UGSP Parts Breakdown



UGLK / UGSP



Dimensions (Inches [mm])			
A	6.5" [165]	D	4.0" [102]
B	1.5" [33]	H1	4.0" [102]
C	5.0" [127]	H2	3.5" [89]



5 YEAR WARRANTY

Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing Belimo GK, AF, NF, GM, AM and NM series actuators. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select the actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. Due to the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" to 1-½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuator can be flipped or directional switch turned to a new rotation.

Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	¾" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth) ¾" (17 teeth) 1-1/8" (25 teeth) 1-½" (33 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water, and steam
Weight	5.7 lbs [2.6 kg]

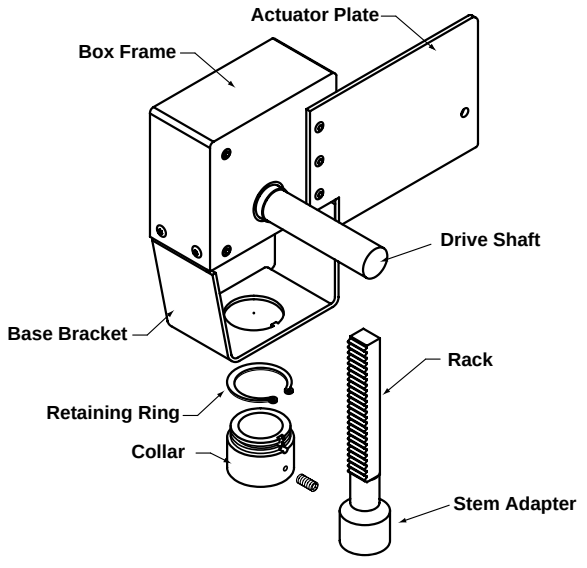
Suitable Actuators	Close-Off Ranges
GK Series	10-250 psi
AF Series	4-250 psi
NF Series	10-250 psi
GM Series	10-250 psi
AM Series	4-250 psi
NM Series	10-250 psi

Competitor Valves**

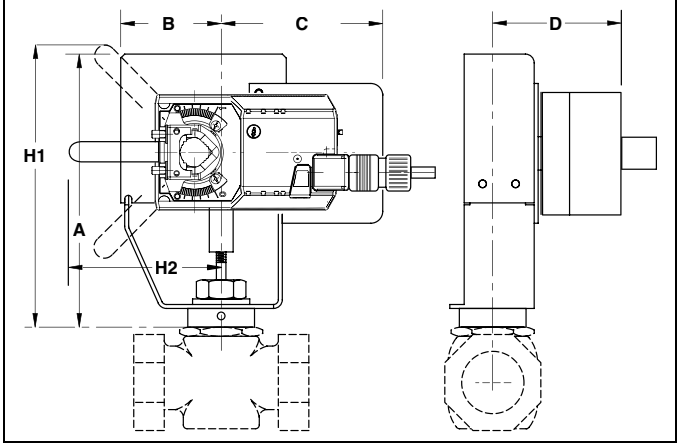
Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider
Warren Controls

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

UGLK / UGSP Parts Breakdown



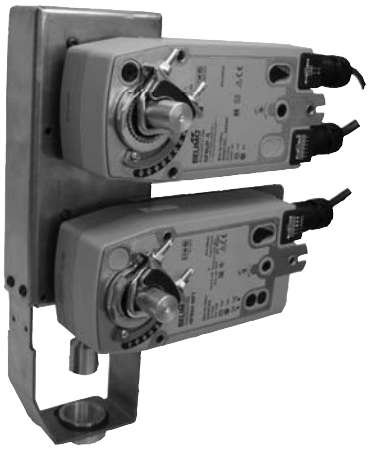
UGLK / UGSP



Dimensions (Inches [mm])			
A	9"-11" [178-356]	D	4.0" [102]
B	1.5" [33]	H1	4.0" [102]
C	5.0" [127]	H2	3.5" [89]

UGLK.../UGSP... Retrofit Linkage for Globe Valves

For Dual Mounted AF, GM, and GK Series Actuators



5 YEAR WARRANTY

Application

The UGLK/UGSP retrofit kit is designed to easily attach to the valve bonnet on select competitor valves utilizing tandem Belimo AF, GM, and GK series actuators when higher close-off is required. The kit is used to restore service to the valve without removal of the valve, saving down time.

The unique collar design allows the UGLK to be mounted on various two-way or three-way valves. The rack and pinion construction allow the linkage to be used with normally open and normally closed valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. The linkage utilizes standard air-side actuators that can be purchased at any time and mounted in the field. With the free spring design of the linkage, clearance is not an issue. The linkage can be oriented at any angle on the bonnet.

Operation

The UGLK/UGSP linkage provides approximately ½" to 1-½" of downward stroke with 95° rotation on the actuator. The linkage travel is based on the size of gear inside. The gear size is stamped on the frame. This allows the valve to extend fully open or closed based on signal. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

Technical Data	UGLK... / UGSP...
Materials:	
Frame, plate, base	stainless steel
Collar	brass
Drive shaft	¾" brass
Gears, rack	sinttered steel
Bearing	bronze
Stem adaptor	brass
Stroke max (gear teeth)	½" (12 teeth) ¾" (17 teeth) 1-1/8" (25 teeth) 1-½" (33 teeth)
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water, and steam max steam inlet 50 psi
Weight	10 lbs [4.5 kg]

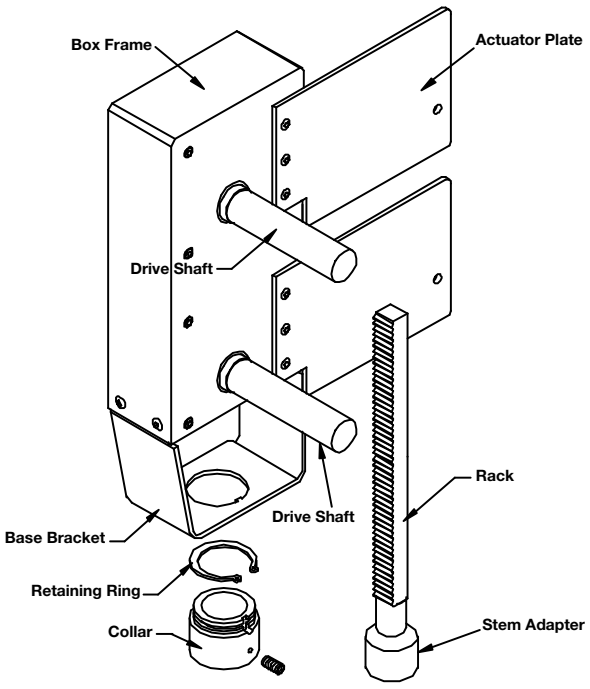
Suitable Actuators	Close-Off Ranges
2*AF Series	10-250 psi
2*GM Series	25-250 psi
2*GK Series	25-250 psi

Competitor Valves**

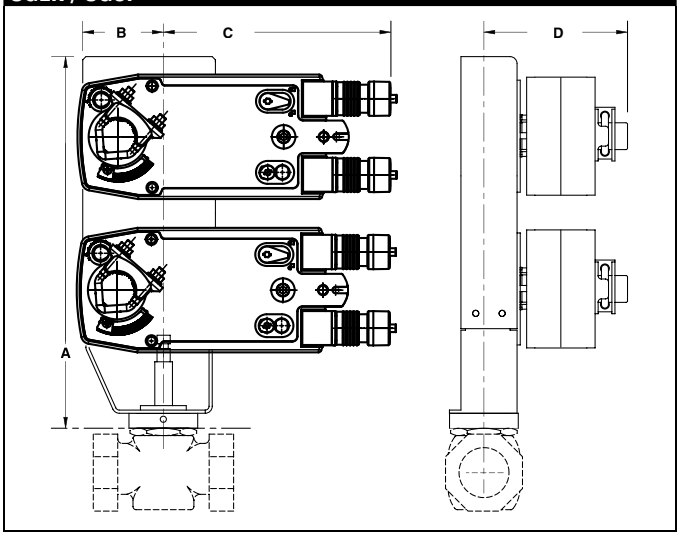
Honeywell
JCI
Siemens / Powers
Siebe / Invensys / TAC / Schneider
Warren Controls

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

UGLK / UGSP Parts Breakdown



UGLK / UGSP



Dimensions (Inches [mm])			
A	13"-17" [483]	C	9" [229]
B	3" [76]	D	5" [127]

5 YEAR WARRANTY

Application

The UGVL retrofit kit is designed to easily attach LV and SV series actuators to select globe valves. Its unique adjustable design allows the UGVL to be mounted on ½" to 2" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a UGVL linkage will be factory installed along with a LV or SV series actuator. Included in the kit will be all the necessary hardware to facilitate mounting to the valve.

Operation

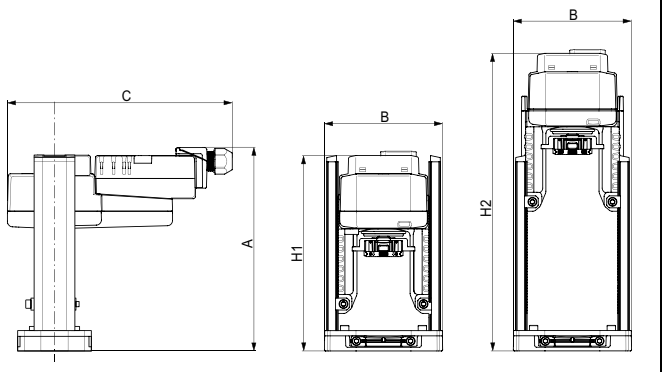
The UGVL linkage with actuator will provide 20 mm of linear travel to accommodate a wide range of valves.

Suitable Actuators

Linkage	Non-Spring Return	Electronic Fail-Safe
UGVL	LV, SV	LVK, SVK

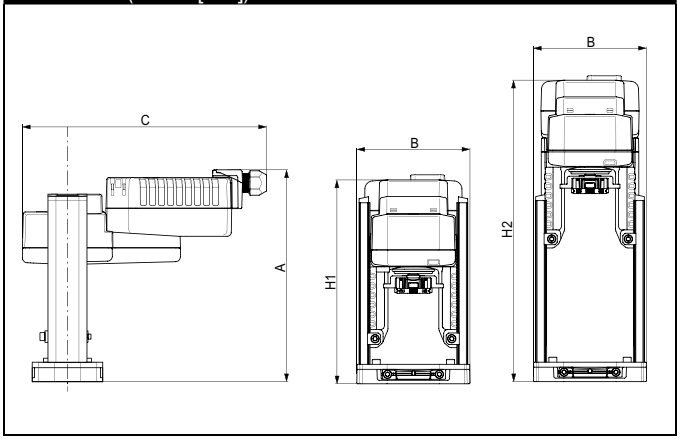
Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Stem	fits slotted or threaded
Frame, plate, base	aluminum and steel
Collar	aluminum and steel, (fits bonnets up to 1.7" dia.)
Stem adaptor	aluminum and steel (fits 0.66" dia. threaded or slotted)
Stroke	0.6" [15 mm] LVK, 0.75" [20 mm] SVK
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	32°F to 388°F [0°C to 170°C]
Weight	1.9 lbs

Dimensions (Inches [mm]) with LV and SV Series Actuators



A	B	C	H1	H2
8" [203.2]	4.4" [113]	8.60" [218]	7.5" [190]	11.4" [290]

Dimensions (Inches [mm]) with LVK and SVK Series Actuators



A	B	C	H1	H2
8.5" [217]	4.4" [113]	9.6" [244]	8.4" [207]	12.1" [307]

Application Notes

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

SGVL Schneider Globe Valve Linkage

For use with LV and SV Series Actuators

5 YEAR WARRANTY

Application

The SGVL retrofit kit is designed to easily attach LV and SV series actuators to select Schneider® globe valves. The cast base and free spinning collar allow the SGVL to be mounted on ½" to 2" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a SGVL linkage will be factory installed along with a LV or SV series actuator. Included in the kit is all the necessary hardware to facilitate mounting to the Schneider valve.

Operation

The SGVL linkage with actuator will provide 20 mm of linear travel to accommodate a wide range of valve sizes.

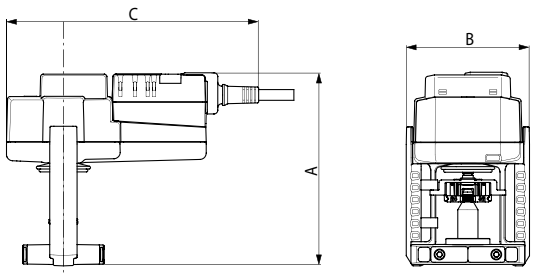
Suitable Actuators

Linkage	Non-Spring Return	Electronic Fail-Safe
SGVL	LV, SV	LVK, SVK

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50]
Frame, plate, base	aluminum
Collar*	aluminum (fits VB7 ½" to 2"/VB9 ½" to 1-¼" valves)
Coupling	aluminum
Stem adaptor	steel
Stroke	0.6" [15 mm] LVK, 0.75" [20 mm] SVK
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	20°F to 250°F [-7°C to +120°C]
Housing material	aluminum die cast and plastic casing
Weight	0.5 lbs

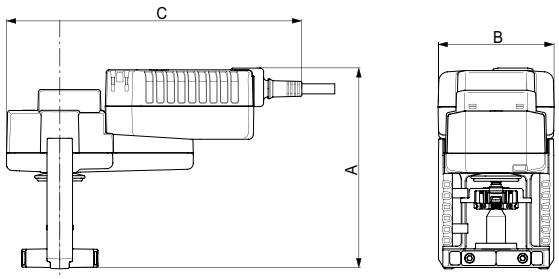
*Will also fit post 1994 VB9 1-½" to 2" valves.

Dimensions (Inches [mm]) with LV and SV Series Actuators



A	B	C
6" [152]	3.9" [98]	7.8" [199]

Dimensions (Inches [mm]) with LVK and SVK Series Actuators



A	B	C
6.7" [169]	3.9" [98]	8.2" [209]

Application Notes

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

FGVL Universal Globe Valve Linkage

For Use with AVK, EV, and RV Series Actuators

Application

The FGVL retrofit kit is designed to easily attach AVK, EV, and RV series actuators to select flanged globe valves requiring larger stem travels and higher forces. Its casted base and lower locking clamp allow the FGVL to be mounted on 2½" to 6" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a FGVL linkage will be factory installed along with an AVK, EV, or RV series actuator. Included in the kit will be all the necessary hardware to facilitate mounting to the valve.

Operation

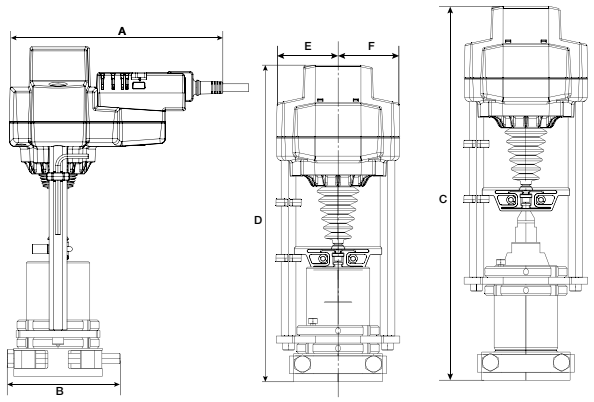
The FGVL linkage with actuator will provide up to 2" [50 mm] of linear travel to accommodate a wide range of valves.

Suitable Actuators

Linkage	Non-Spring Return	Electronic Fail-Safe
FGVL	EVB(X), RVB(X)	AVKB(X)

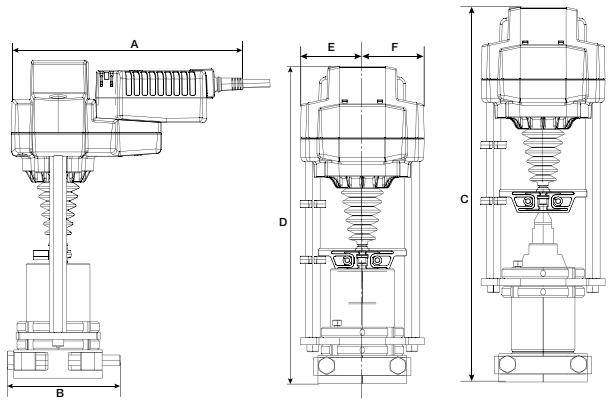
Technical Data	
Service	chilled or hot water and steam
Applicable valve size	2½" [64], 3" [80], 4" [101], 5" [127], 6" [152]
Stem	316 stainless steel
Frame, plate, base	aluminum and steel (fits competitor bonnets up to 2.3" dia.)
Collar	aluminum
Coupling	GF nylon, supplied
Housing material	aluminum die cast and plastic casing
Stem adaptor	aluminum and steel (fits 1.18" dia. threaded or slotted)
Stroke	1.25" [32 mm] AVK, 2" [50 mm] EV/RV
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	32°F to 388°F [0°C to 170°C]
Weight	5 lbs

Dimensions (Inches [mm]) with EV and RV Series Actuators



A	B	C	D	E	F
9.2" [234]	5.00" [127]	16.33" [425]	14.00" [356]	2.78" [71]	

Dimensions (Inches [mm]) with AVK Series Actuators



A	B	C	D	E	F
10.25" [260]	5.00" [127]	16.73" [425]	14.00" [356]	2.78" [71]	

Application Notes

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

WGVL Warren Globe Valve Linkage

For use with EV, RV and AVK Series Actuators

5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	2" [50], 2-½" [65], 3" [80], 4" [100], 5" [125], 6" [150]
Stem	316 stainless steel
Frame, plate, base	aluminum, steel (fits Warren Type 20,22,23,30, and 32) (Belimo G6 & G7 series)
Collar	steel
Stem adaptor	steel
Stroke	2" [50 mm]
Mounting position	360°
Media temp range (water)	20°F to 250°F [-7°C to +120°C]
Media temp range (steam)	32°F to 388°F [0°C to 170°C]
Housing material	aluminum die cast and plastic casing
Weight	2.59 lbs

Application

The WGVL retrofit kit is designed to easily attach AVK, EV and RV series actuators to select Warren® globe valves. The cast base and lower lock nut allow the WGVL to be mounted on 2-½" to 6" two-way or three-way valves in both normally open and normally closed configurations.

Default/Configuration

The default set up for a WGVL linkage will be factory installed along with an AVK or EV, RV series actuator. Included in the kit is all the necessary hardware to facilitate mounting to the Warren valve.

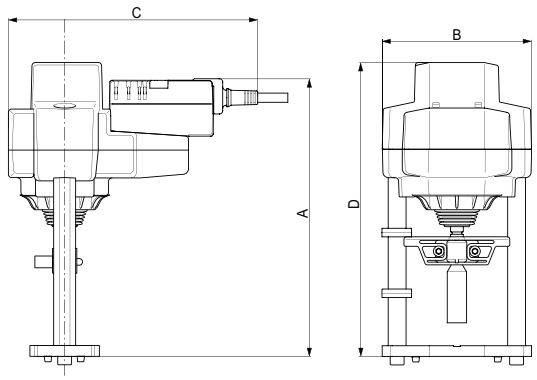
Operation

The WGVL linkage with actuator will provide 50 mm of linear travel to accommodate a wide range of valve sizes.

Suitable Actuators

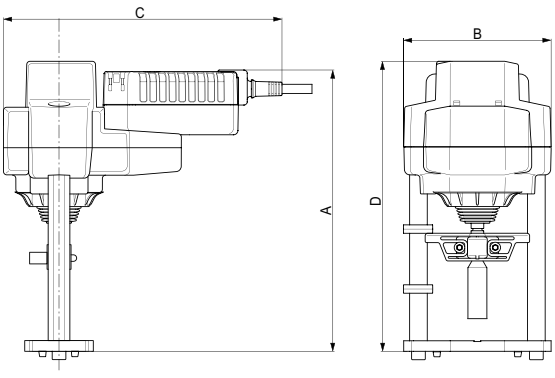
Linkage	Non-Spring Return	Electronic Fail-Safe
WGVL	EV, RV	AVK

Dimensions (Inches [mm]) with EV and RV Series Actuators



A	B	C	D
10.2" [259]	5.5" [140]	9.2" [233]	10.9" [276]

Dimensions (Inches [mm]) with AVK Series Actuators



A	B	C	D
10.4" [264]	5.5" [140]	10.3" [262]	10.9" [276]

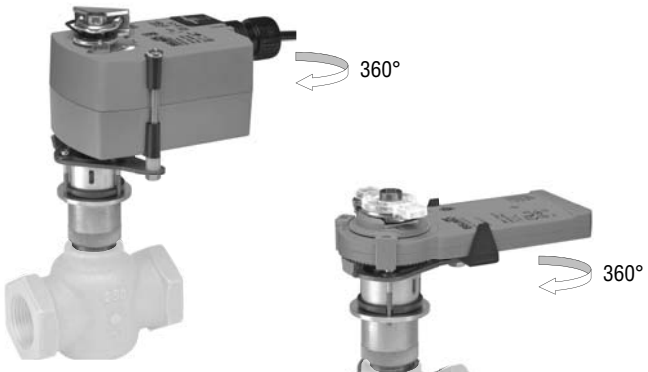
Application Notes

**Consult pages 49-72 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and a cross reference of each valve.

5 YEAR WARRANTY

Technical Data	UGSL1200
Housing	aluminum
Materials:	
Coupling nut	brass
Shafts	stainless steel
Base plate	aluminum
Upper plate	stainless steel
Cams	nylon 6/6 with MDS
Stroke	6 mm in CW direction
Max out force	67 lbf [300 N]
Mounting position	360° mountable as shown
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 15 psi
Weight	1.25 lbs [0.57 kg]
Accessories	UGSL-ADPT Collar for: • Danfoss • HW Braukman • Oventrop • Siemens • Cazzaniga • JCI • Spartan • Taco

Mounting Configurations



TF Actuator*

CM Actuator**

Application

The UGSL1200 retrofit kit is designed to easily attach to the valve bonnet on select Siemens 599 MT/MZ short-stroke valves utilizing Belimo CM and TF* series actuators. See accessories in Technical Data table for all available competitor collars.

The unique coupler design allows the UGSL1200 to be mounted on any ½" to 1¼" two-way or three-way valves. In addition, the linkage is suitable for both normally open and normally closed valves.

Default/Configuration

The default set up for this linkage is for usage with the CM actuator. Included in the kit is an extension piece for TF actuators. Hardware is supplied to attach the shaft extension and anti-rotation screws to both a CM or TF actuator.

Operation

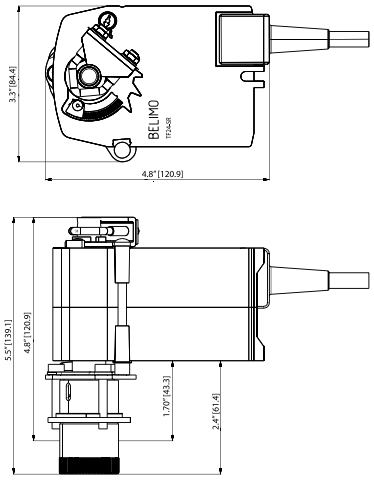
The UGSL1200 linkage provides 6 mm of downward stroke with 95° CW rotation on the actuator. This allows the valve to extend fully open or closed based on signal. The slot located on the housing provides indication when the maximum stroke has been reached. For troubleshooting when using a CM actuator, the operator may use the manual override feature to rotate the linkage up or down. When using the TF, refer to electronic override instructions according to actuator model.

Note: Linkage cannot be used on 1½" normally closed valves.

***TFL actuators required for on/off applications.**
**** CMB24-SR-R for 2V stem down, CMB24-SR-L for 2V stem up.**

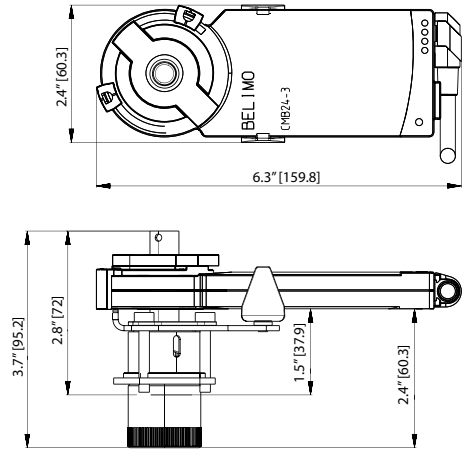
TF Dimensions (Inches [mm])

D315



CM Dimensions (Inches [mm])

D316



Honeywell

VP5.., V5011, V5013, V5045 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VP526 Series	5/8"	No	58	CM	UGLK1808
		Yes		TF	UGLK1808
VP531 Series		No	70	CM	UGLK1808
		Yes		TF	UGLK1808
VP531 Series	7/8"	No	70	CM	UGLK1808
		Yes		TF	UGLK1808
V5011 Series	½"	No	236	LV	UGVL
		Yes		LVK	UGVL
				LF	UGLK1806
V5011F (1014, 1022, 1030, 1048, 1121, 1139)		Yes	236	NF	UGLK1800
				LF	UGLK1806
V5011G (1137, 1145, 1152, 1160, 1178, 1186)		Yes	236	NF	UGLK1800
				LF	UGLK1806
V5011H (1002, 1010)		Yes	236	NF	UGLK1800
				LF	UGLK1806
V5011J (1012, 1079)		Yes	236	NF	UGLK1800
				LF	UGLK1806
V5013 Series		No	236	LV	UGVL
		Yes		LVK	UGVL
V5013F (1004, 1012, 1079)		Yes	236	NF	UGLK1800
				LF	UGLK1806
V5013N Series		No	236	LV	UGVL
		Yes		LVK	UGVL
				LF	UGLK1806
V5045		No	236	AM	UGLK1804
		Yes		NF	UGLK1804
VP525 Series		No	110	CM	UGLK1808
		Yes		TF	UGLK1808
VP526 Series		No	50	CM	UGLK1808
		Yes		TF	UGLK1808
VP527 Series		No	45	CM	UGLK1808
		Yes		TF	UGLK1808
VP531 Series		No	70	CM	UGLK1808
		Yes		TF	UGLK1808
V5011 (H1028, G1194, J1023)	¾"	Yes	236	NF	UGLK1800
		Yes	110	LF	UGLK1806
V5011 Series		No	211	LV	UGVL
		Yes		LVK	UGVL
		Yes	110	LF	UGLK1806
V5011F (1055, 1147)		Yes	236	NF	UGLK1800
		Yes	110	LF	UGLK1806
V5013 Series		No	211	LV	UGVL
		Yes		LVK	UGVL
V5013F (1020, 1087)		Yes	236	NF	UGLK1800
		Yes	110	LF	UGLK1806
V5013N Series		No	211	LV	UGVL
		Yes		LVK	UGVL
		Yes	110	LF	UGLK1806
V5045		Yes	236	NF	UGLK1804
VP525 Series		No	55	CM	UGLK1808
		Yes		TF	UGLK1808
VP531 Series		No	70	CM	UGLK1808
		Yes		TF	UGLK1808
V5011 (F1063, F1154, H1028, G1194)	1"	Yes	236	AF	UGLK1800
		Yes	65	LF	UGLK1806
V5011 Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
				AF	UGLK1800
		Yes	65	LF	UGLK1806
V5013 Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5013F (1038, 1095)	1"	Yes	236	AF	UGLK1800
		Yes	65	LF	UGLK1806
V5013N Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
				AF	UGLK1800
		Yes	65	LF	UGLK1806
V5045		No	236	AM	UGLK1804
		Yes		NF	UGLK1804
V5011 (H1044, G1210, J1049)	1¼"	Yes	221	AF	UGLK1800
		Yes	40	LF	UGLK1806
V5011 Series		Yes	221	AF	UGLK1800
		No	236	SV	UGVL
		Yes		SVK	UGVL
		Yes	40	LF	UGLK1806
V5011F (1071, 1162)		Yes	221	AF	UGLK1800
		Yes	40	LF	UGLK1806
V5013 Series		No	236	SV	UGVL
		Yes		SVK	UGVL
V5013F (1046, 1103)		Yes	221	AF	UGLK1800
		Yes	40	LF	UGLK1806
V5013N Series		Yes	221	AF	UGLK1800
		No	236	SV	UGVL
		Yes		SVK	UGVL
		Yes	40	LF	UGLK1806
V5045		No	236	AM	UGLK1804
		Yes	160	NF	UGLK1804
V5011 (F1089, F1178, G1228)	1½"	Yes	153	AF	UGLK1800
		Yes	26	LF	UGLK1806
V5011 Series		Yes	153	AF	UGLK1800
		No	160	SV	UGVL
		Yes		SVK	UGVL
		Yes	26	LF	UGLK1806
V5013 Series		No	160	SV	UGVL
		Yes		SVK	UGVL
V5013F (1053, 1111)		Yes	153	AF	UGLK1800
		Yes	26	LF	UGLK1806
V5013N Series		Yes	153	AF	UGLK1800
		No	160	SV	UGVL
		Yes		SVK	UGVL
		Yes	26	LF	UGLK1806
V5045		No	211	AM	UGLK1804
		Yes		AF	UGLK1804
V5011 (F1097, F1188, G1103)	2"	Yes	86	AF	UGLK1800
		Yes	173	GK	UGLK1800
		Yes	40	NF	UGLK1800
		Yes	14	LF	UGLK1806
V5011 Series		Yes	86	AF	UGLK1800
		Yes	173	GK	UGLK1800
		No	85	SV	UGVL
		Yes		SVK	UGVL
		Yes	14	LF	UGLK1806
V5013 Series		No	85	SV	UGVL
		Yes		SVK	UGVL
V5013F (1061, 1129)		Yes	86	AF	UGLK1800
		Yes	173	GK	UGLK1800
		Yes	40	NF	UGLK1800
		Yes	14	LF	UGLK1806
V5013N Series		Yes	86	AF	UGLK1800
		Yes	173	GK	UGLK1800
		No	85	SV	UGVL
		Yes		SVK	UGVL
		Yes	14	LF	UGLK1806
V5045		No	120	AM	UGLK1804
		Yes		AF	UGLK1804

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V3350, V3351, V3360, V3450, V3451, V3460, V5011, V5013 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V3350 (A2009, A2017, B2007, C2013, D2003)	2½"	Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	55	SV	UGVL
		Yes		SVK	UGVL
V3351 (A2008, C2005, D2002)		Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	55	SV	UGVL
		Yes		SVK	UGVL
V3360E2008, V3361E2007		Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	55	SV	UGVL
		Yes		SVK	UGVL
		Yes	52	AF	UGLK1800
V3450 (A2008, A2016, B2006, C2012, D2002)		Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	55	SV	UGVL
		Yes		SVK	UGVL
		Yes	52	AF	UGLK1800
V3451 (A2007, C2003, C2004)		Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	77	SV	UGVL
		Yes		SVK	UGVL
		Yes	52	AF	UGLK1800
V3460E2007, V3461E2006		Yes	211	2*GK	UGLK1870
		Yes	110	2*AF	UGLK1870
		No	55	SV	UGVL
		Yes		SVK	UGVL
		Yes	52	AF	UGLK1800
V5011 (A1734, F1105, F1196, G1111)		Yes	211	2*GK	UGLK1870
V5011 Series		No	52	SV	UGVL
		Yes		SVK	UGVL
V5013 (B1003, C1001)		Yes	211	2*GK	UGLK1870
		Yes	52	AF	UGLK1800
V5013 Series		No	52	SV	UGVL
		Yes		SVK	UGVL
V3350 (A3007, A3015, B3005, C3011, D3001)	3"	Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL
V3351 (A3006, C3002, C3003)		Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL
V3360E3006, V3361E3005		Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL
V3450 (A3006, A3014, B3004, C3010, D3000)		Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL
V3451 (A3005, C3001, C3002)		Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL
V3460E3005, V3461E3004		Yes	77	2*AF	UGLK1870
		Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
		No	38	SV	UGVL
		Yes		SVK	UGVL

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V5011 (A1767, F1113, F1204, G1129)	3”	Yes	38	AF	UGLK1800
		Yes	136	2*GK	UGLK1870
V5011 Series		No	40	SV	UGVL
		Yes		SVK	UGVL
V5013 (B1011, C1019)		Yes	77	GK	UGLK1800
		Yes	136	2*GK	UGLK1870
V5013 Series		No	40	SV	UGVL
		Yes		SVK	UGVL
V3350 (A4005, A4013, B4003, C4019, D4009)	4”	No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V3351 (A4004, C4000, C4001)		No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V3360E4004, V3361E4003		No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V3450 (A4004, A4012, B4002, C4018, D4008)		No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V3451 (A4003, C4000, C4009)		No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V3460E4003, V3461E4002		No	22	EV	FGVL
		Yes		2*AF	UGLK1872
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V5011 (A1858, B1013)		No	22	EV	FGVL
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	AF	UGLK1802
V5013 (B1029, C1027)		No	22	EV	FGVL
		Yes		GK	UGLK1802
		No	40	RV	FGVL
		Yes		2*GK	UGLK1872
V3350 (A5002, A5010, B5000, C5016, D5006)	5”	No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V3351 (A5001, C5008, D5005)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V3360E5001, V3361E5000		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V3360, V3450, V3451, V3460, V5011, V5013, V3350, V3351, VGF2, VGF3 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V3450 (A5001, A5019, B5009, C5015, D5005)	5”	No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V3451 (A5000, C5006, C5007)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V3460E5000, V3461E5009		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V5011 (A1882, B1047)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	14	GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V5013 (B1037, C1035)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		No	14	EV	FGVL
		Yes		GK	UGLK1802
				2*AF	UGLK1872
		Yes	10	AF	UGLK1802
V3350 (A6000, A6008, A6018, C6014, D6004)	6”	No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V3351 (A6009, C6005, C6006)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V3360E6009, V3361E6008		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V3450 (A6009, A6007, A6017, C6013, D6003)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V3451 (A6008, C6004, C6005)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V3460E6008, V3461E6007		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V5011 (A1916, B1078)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
V5013 (B1045, C1043)		No	22	RV	FGVL
		Yes		2*GK	UGLK1872
		Yes	10	GK	UGLK1802
				2*AF	UGLK1872
VGF2.. Series	2½”	No	52	EV	FGVL
		Yes		AVK	FGVL
VGF3.. Series		No		EV	FGVL
		Yes		AVK	FGVL

All close-off pressures listed are approximate and based on valve condition and application.

Honeywell

V5013, VGF2, VGF3 Series Valves

Linkage/Actuator Selection Guide

Johnson Controls

V-37, V-38, V-39, V-43, VG7, VTM, V(B)-37, V(B)39, V(B)43, V(B)-58 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VGF2.. Series	3”	No	40	EV	FGVL
		Yes		AVK	FGVL
VGF3.. Series		No		EV	FGVL
		Yes		AVK	FGVL
VGF2.. Series	4”	No	50	EV	FGVL
VGF3.. Series		No	50	EV	FGVL
VGF2.. Series	5”	No	40	RV	FGVL
VGF3.. Series		No	40	RV	FGVL
VGF2.. Series	6”	No	30	RV	FGVL
VGF3.. Series		No	30	RV	FGVL
JOHNSON CONTROLS					
V-3766	½”	No	236	LM	UGLK1552
		Yes		LF	UGLK1552
V-3854-5		No	236	LM	UGLK1554
		Yes		LF	UGLK1554
V-3966		No	236	LM	UGLK1552
		Yes		LF	UGLK1552
V-4332		No	236	LV	UGVL
		Yes		LVK	UGVL
VG7000 Series		No	236	LV	UGVL
		Yes		LVK	UGVL
VG7XXX-(C, E, GT) *Threaded Stem Only		Yes	236	LF	UGLK1416
VTM-TN-(007, 019, 047) *Threaded Stem Only		No	236	LM	UGLK1550
		Yes		LF	UGLK1550
				LV	UGVL
				LVK	UGVL
V(B)-3754 Series, Bronze Trim	¾”	No	211	LV	UGVL
		Yes		LVK	UGVL
V(B)-3974 Series, Bronze Trim		No	211	LV	UGVL
		Yes		LVK	UGVL
V(B)-4324 Series, Bronze Trim		No	211	LV	UGVL
		Yes		LVK	UGVL
V(B)-5844 Series		No	211	LV	UGVL
		Yes		LVK	UGVL
V-3754-(4, 1008, 1022, 1026)		Yes	211	LF	UGLK1550
V-3974-(4, 1004, 1010)		Yes	211	LF	UGLK1550
V-4324-(4, 1005, 1006, 1013)		Yes	211	LF	UGLK1550
V-4332		No	211	LV	UGVL
		Yes		LVK	UGVL
VG7000 Series		No		LV	UGVL
		Yes		LVK	UGVL
VG7XXX-LT *Threaded Stem Only		Yes	169	LF	UGLK1416
V(B)-3754 Series, Bronze Trim	1”	No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-3974 Series, Bronze Trim		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-4324 Series, Bronze Trim		No	93	LV	UGVL
		Yes		LVK	UGVL
V(B)-4324 Series, Bronze Trim		No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-5844 Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
V-3754-(5, 1010, 1023, 1027)		Yes	173	NF	UGLK1402
		Yes	236	AF	UGLK1402
V-3974-(5, 1005, 1011)		Yes	173	NF	UGLK1402
		Yes	236	AF	UGLK1402
V-4324-(5, 1007, 1008, 1014)		Yes	173	NF	UGLK1402
		Yes	236	AF	UGLK1402

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V(B)-58, V-37, V-39, V-43, VG7, V(B)-37, V(B)-39, V(B)-43, V(B)-58, V-52 Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-4332	1"	No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
VG7000 Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
VG7XXX-NT *Threaded Stem Only		Yes	93	LF	UGLK1418
V(B)-3754 Series, Bronze Trim	1¼"	No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-3974 Series, Bronze Trim		No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-4324 Series, Bronze Trim		No	236	SV	UGVL
		Yes		SVK	UGVL
V(B)-5844 Series		No	236	SV	UGVL
		Yes		SVK	UGVL
V-3754-8		Yes	221	AF	UGLK1402
		Yes	110	NF	UGLK1402
V-4324-8		Yes	221	AF	UGLK1402
		Yes	110	NF	UGLK1402
V-4332		No	236	SV	UGVL
		Yes		SVK	UGVL
VG7000 Series		No	236	SV	UGVL
		Yes		SVK	UGVL
VG7XXX-PT *Threaded Stem Only		Yes	65	LF	UGLK1418
V(B)-3754 Series, Bronze Trim	1½"	No	160	SV	UGVL
		Yes		SVK	UGVL
V(B)-3974 Series, Bronze Trim		No	160	SV	UGVL
		Yes		SVK	UGVL
V(B)-4324 Series, Bronze Trim		No	160	SV	UGVL
		Yes		SVK	UGVL
V(B)-5844 Series		No	160	SV	UGVL
		Yes		SVK	UGVL
V-3754-(6, 1028, 1029, 1030)		Yes	77	NF	UGLK1402
		Yes	153	AF	UGLK1402
		Yes	236	GK	UGLK1402
		Yes	211	2*AF	UGLK1478
V-3974-(6, 1012, 1013)		Yes	77	NF	UGLK1402
		Yes	153	AF	UGLK1402
		Yes	236	GK	UGLK1402
		Yes	211	2*AF	UGLK1478
V-4324-(6,1015, 1016, 1017)		Yes	77	NF	UGLK1402
		Yes	153	AF	UGLK1402
		Yes	236	GK	UGLK1402
		Yes	211	2*AF	UGLK1478
V-4332		No	160	SV	UGVL
		Yes		SVK	UGVL
V-5254-(1, 2, 3, 11)		Yes	77	NF	UGLK1404
		No	153	AM	UGLK1404
		Yes		AF	UGLK1404
		No	236	GM	UGLK1404
				2*GM	UGLK1472
V-5254-(1, 2, 3, 11)		Yes	236	GK	UGLK1404
				2*AF	UGLK1472
				2*GK	UGLK1472
V-5464-(1, 2, 11)		Yes	77	NF	UGLK1404
		No	153	AM	UGLK1404
		Yes		AF	UGLK1404
		No	236	GM	UGLK1404
				2*GM	UGLK1472
		Yes		GK	UGLK1404
				2*AF	UGLK1472
				2*GK	

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5844-(1, 2, 3, 11)	1½"	Yes	77	NF	UGLK1404
		Yes	153	AF	UGLK1404
		No	236	2*GM	UGLK1472
		Yes		GK	UGLK1404
				2*AF	UGLK1472
				2*GK	
VG7000 Series		No	160	SV	UGVL
		Yes		SVK	UGVL
VG7XXX-RT *Threaded Stem Only		Yes	77	NF	UGLK1422
		Yes	153	AF	UGLK1422
		No	236	GM	UGLK1422
		Yes		GK	UGLK1422
		Yes	26	LF	UGLK1420
V(B)-3754 Series, Bronze Trim	2"	No	85	SV	UGVL
		Yes		SVK	UGVL
V(B)-3974 Series, Bronze Trim		No	85	SV	UGVL
		Yes		SVK	UGVL
V(B)-4324 Series, Bronze Trim		No	85	SV	UGVL
		Yes		SVK	UGVL
V(B)-5844 Series		No	85	SV	UGVL
		Yes		SVK	UGVL
V-3754-7		Yes	86	AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406
V-3974-7		Yes	86	AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406
V-4324-7		Yes	86	AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406
V-4332		No	85	SV	UGVL
		Yes		SVK	UGVL
V-5254-(4, 5, 6, 12)		No	86	AM	UGLK1406
		Yes		AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406
V-5464-(3, 4, 12)		No	86	AM	UGLK1406
		Yes		AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V-54, V-58, VG7, V-52, VB-37, VB-39, VB-43 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5844-(4, 5, 6, 12)	2”	Yes	86	AF	UGLK1406
		No	173	GM	UGLK1406
		Yes		GK	UGLK1406
				2*AF	UGLK1474
		No	236	2*GM	UGLK1474
		Yes		2*GK	UGLK1474
		Yes	40	NF	UGLK1406
VG7000 Series		No	85	SV	UGVL
		Yes		SVK	UGVL
VG7XXX-ST *Threaded Stem Only		Yes	86	AF	UGLK1422
		No	173	GM	UGLK1422
		Yes		GK	UGLK1422
		Yes	153	AF	UGLK1422
		Yes	40	NF	UGLK1422
		Yes	14	LF	UGLK1420
V-5210-4595	2½”	No	75	RV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	38	AF	UGLK1412
		No	136	RV	FGVL
		Yes		2*GK	UGLK1478
V-5252-(2, 4, 5, 6, 7, 8, 32, 33)		No	110	RV	FGVL
		Yes		AVK	FGVL
		No	52	EV	FGVL
		Yes		AF	UGLK1404
V-5252-(4, 5, 6, 7, 8, 32, 33)		Yes	211	2*GK	UGLK1472
		Yes	110	2*AF	UGLK1472
V-5410-4595		No	75	RV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	38	AF	UGLK1412
		No	136	RV	FGVL
		Yes		2*GK	UGLK1478
V-5462-(6, 7, 34)		No	211	RV	FGVL
		Yes		2*GK	UGLK1472
		No	110	RV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1472
		No	52	EV	FGVL
		Yes		AF	UGLK1404
V-5842-(7, 8, 31)		No	211	RV	FGVL
		Yes		2*GK	UGLK1472
		No	110	RV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1472
		No	52	EV	FGVL
		Yes		AF	UGLK1404
VB-3752-19		Yes	211	2*GK	UGLK1472
		No	200	RV	FGVL
		Yes	120	AVK	FGVL
		Yes	110	2*AF	UGLK1472
		No	75	EV	FGVL
		Yes	52	AF	UGLK1404
VB-3970-11		Yes	211	2*GK	UGLK1472
		No	110	RV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1472
		No	52	EV	FGVL
		Yes		AF	UGLK1404
VB-4322-9		Yes	211	2*GK	UGLK1472
		No	110	RV	FGVL
VB-4322-9		Yes	110	AVK	FGVL
				2*AF	UGLK1472
		No	52	EV	FGVL
		Yes		AF	UGLK1404

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG2231 TM	2½"	No	211	RV	FGVL
		No	110	EV	FGVL
		Yes		AVK	FGVL
		Yes	211	2*GK	UGLK1472
		Yes	110	2*AF	UGLK1472
		Yes	52	AF	UGLK1404
VG2431 TM		No	211	RV	FGVL
		No	110	EV	FGVL
		Yes		AVK	FGVL
		Yes	211	2*GK	UGLK1472
		Yes	110	2*AF	UGLK1472
		Yes	52	AF	UGLK1404
VG2831 TM		No	211	RV	FGVL
		No	110	EV	FGVL
		Yes		AVK	FGVL
		Yes	211	2*GK	UGLK1472
		Yes	110	2*AF	UGLK1472
		Yes	52	AF	UGLK1404
V-5210-4596	3"	No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5252-(12, 13, 35)		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5252-(9, 10, 11, 34)		Yes	77	2*AF	UGLK1472
		Yes	38	AF	UGLK1404
		Yes	136	2*GK	UGLK1472
		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
V-5410-4596		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5462-10		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5462-35		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5462-36		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V-54, V-58, VB-37, VB-39, VB-43 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5462-8	3"	No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5462-9		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5842-10		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5842-17		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5842-18		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5842-32		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
V-5842-33		No	93	RV	FGVL
		Yes		2*GK	UGLK1478
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5842-9		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VB-3752-22		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	70	EV	FGVL
		Yes	60	AVK	FGVL
		Yes	52	2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VB-3970-14		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VB-4322-11		No	93	RV	FGVL
		Yes		2*GK	UGLK1476
		No	52	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	26	AF	UGLK1410

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG2231 UM	3”	No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1476
		Yes	52	2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VG2231 UN		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1478
		Yes	52	2*AF	UGLK1478
		Yes	26	AF	UGLK1412
VG2431 UM		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1476
		Yes	52	2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VG2431 UN		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1478
		Yes	52	2*AF	UGLK1478
		Yes	26	AF	UGLK1412
VG2831 UM		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1476
		Yes	52	2*AF	UGLK1476
		Yes	26	AF	UGLK1410
VG2831 UN		No	93	RV	FGVL
		No	52	EV	FGVL
		Yes		AVK	FGVL
		Yes	93	2*GK	UGLK1478
		Yes	52	2*AF	UGLK1478
		Yes	26	AF	UGLK1412
V-5210-4597	4”	No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5252-(14, 36)		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410
V-5252-(15, 16, 37)		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5410-4597		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5462-11		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V-54, V-58, VB-37, VB-39, VB-43 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5462-12	4”	No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410
V-5462-13		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5462-14		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5462-37		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410
V-5462-38		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5842-11		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5842-12		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5842-34		No	52	RV	FGVL
		Yes		2*GK	UGLK1478
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1478
		Yes	14	AF	UGLK1412
VB-3752-25		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	40	EV	FGVL
		Yes	30	AVK	FGVL
		Yes	26	2*AF	UGLK1476
		Yes	14	AF	UGLK1410
VB-3970-17		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410
VB-4322-13		No	52	RV	FGVL
		Yes		2*GK	UGLK1476
		No	26	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1476
		Yes	14	AF	UGLK1410

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VG2231 VM	4”	No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1476
		Yes	26	2*AF	UGLK1476
		Yes	14	AF	UGLK1410
VG2231 VN		No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1478
		Yes	26	2*AF	UGLK1478
		Yes	14	AF	UGLK1412
VG2431 VM		No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1476
		Yes	26	2*AF	UGLK1476
		Yes	14	AF	UGLK1410
VG2431 VN		No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1478
		Yes	26	2*AF	UGLK1478
		Yes	14	AF	UGLK1412
VG2831 VM		No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1476
		Yes	26	2*AF	UGLK1476
		Yes	14	AF	UGLK1410
VG2831 VN		No	52	RV	FGVL
		No	26	EV	FGVL
		Yes		AVK	FGVL
		Yes	52	2*GK	UGLK1478
		Yes	26	2*AF	UGLK1478
		Yes	14	AF	UGLK1412
V-5252-17	5”	No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5252-18		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5252-38		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5462-15		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5462-16		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414

All close-off pressures listed are approximate and based on valve condition and application.

Johnson Controls

V-54, V-58, VB-37, VB-39, VB-43, VG22, VG24, VG28, V-52 Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5462-39	5”	No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5842-13		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5842-14		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5842-35		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VB-3752-28		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VB-3970-20		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VB-4322-19		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	14	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VG2231 WN		No	22	RV	FGVL
		No	14	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	14	GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VG2431 WN		No	22	RV	FGVL
		No	14	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	14	GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
VG2831 WN		No	22	RV	FGVL
		No	14	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	14	GK	UGLK1414
				2*AF	UGLK1480
		Yes	10	AF	UGLK1414
V-5252-19	6”	No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V-5252-39	6”	No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5462-17		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5462-18		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5462-40		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5842-15		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5842-16		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
V-5842-36		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
VB-3752-31		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
VB-3970-23		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
VB-4322-18		No	22	RV	FGVL
		Yes		2*GK	UGLK1480
		No	10	EV	FGVL
		Yes		GK	UGLK1414
				2*AF	UGLK1480
VG2231 YN		No	22	RV	FGVL
		No	10	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	10	GK	UGLK1414
				2*AF	UGLK1480
VG2431 YN		No	22	RV	FGVL
		No	10	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	10	GK	UGLK1414
				2*AF	UGLK1480
VG2831 YN		No	22	RV	FGVL
		No	10	EV	FGVL
		Yes	22	2*GK	UGLK1480
		Yes	10	GK	UGLK1414
				2*AF	UGLK1480

All close-off pressures listed are approximate and based on valve condition and application.

Robertshaw

V6600, V6700, V6800 Series Valves

Linkage/Actuator Selection Guide

Siebe\Invensys\Barber Colman\Schneider

Belimo USA G2, Belimo USA G3, VB30.., VB7.., VB80.., VB9.. Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
V6600	½"	No	236	LV	UGVL
		Yes		LVK	UGVL
V6700		No	236	LV	UGVL
		Yes		LVK	UGVL
V6600	¾"	No	211	LV	UGVL
		Yes		LVK	UGVL
V6700, V6800		No	211	LV	UGVL
		Yes		LVK	UGVL
V6600	1"	No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
V6700		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
V6600	1¼"	No	236	SV	UGVL
		Yes		SVK	UGVL
V6700		No	236	SV	UGVL
		Yes		SVK	UGVL
V6600	1½"	No	160	SV	UGVL
		Yes		SVK	UGVL
V6700		No	160	SV	UGVL
		Yes		SVK	UGVL
V6600	2"	No	85	SV	UGVL
		Yes		SVK	UGVL
V6700		No	85	SV	UGVL
		Yes		SVK	UGVL
SIEBE\INVENSYS\BARBER COLMAN\SCHNEIDER					
Belimo USA G2/G2S Series (OLD = pre April 2018)	½"	Yes	250	LF	UGLK1150**
		No	250	LV	SGVL
		Yes		LVK	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	250	LF	UGLK1150**
		No	250	LV	SGVL
		Yes		LVK	SGVL
VB304X-0-1-4		No	236	LM	UGLK1002
		Yes		LF	UGLK1002
				AF	UGLK1004
VB7000 Series		No	236	LV	SGVL
		Yes		LVK	SGVL
VB7XXX-0-4-1		Yes	236	LF	UGLK1150**
VB7XXX-0-4-2		Yes	236	LF	UGLK1150**
VB7XXX-0-4-3		Yes	236	LF	UGLK1150**
VB7XXX-0-4-4		Yes	236	LF	UGLK1150**
VB804X-0-1-4		No	236	LM	UGLK1002
		Yes		LF	UGLK1002
				AF	UGLK1004
VB9000 Series		No	236	LV	SGVL
		Yes		LVK	SGVL
VB9XXX-0-4-1		Yes	236	LF	UGLK1150**
VB9XXX-0-4-2		Yes	236	LF	UGLK1150**
VB9XXX-0-4-3		Yes	236	LF	UGLK1150**
VB9XXX-0-4-4		Yes	236	LF	UGLK1150**
Belimo USA G2/G2S Series (OLD = pre April 2018)	¾"	Yes	215	LF	UGLK1150**
		No	250	LV	SGVL
		Yes		LVK	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	215	LF	UGLK1150**
		No	250	LV	SGVL
		Yes		LVK	SGVL
VB304X-0-1-7		No	236	NM	UGLK1002
		Yes	110	LF	UGLK1002
VB7000 Series		No	211	LV	SGVL
		Yes		LVK	SGVL
VB7XXX-0-4-5		Yes	211	LF	UGLK1150**
VB7XXX-0-4-6		Yes	211	LF	UGLK1150**

**Not compatible with the new Belimo G2xxB-x, G2xxS-x, and G3xxB-x globe valves.

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB804X-0-1-7	¾"	No	236	NM	UGLK1002
		Yes	110	LF	UGLK1002
VB9000 Series		No	211	LV	SGVL
		Yes		LVK	SGVL
VB9XXX-0-4-5		Yes	211	LF	UGLK1150**
VB9XXX-0-4-6		Yes	211	LF	UGLK1150**
Belimo USA G2/G2S Series (OLD = pre April 2018)	1"	Yes	95	LF	UGLK1150**
		Yes	250	AF	UGLK1000**
		No	250	SV	SGVL
		Yes	236	SVK	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	95	LF	UGLK1150**
		Yes	250	AF	UGLK1000**
		No	250	SV	SGVL
		Yes	236	SVK	SGVL
VB304X-0-1-8		No	173	NM	UGLK1002
		No	236	AM	UGLK1004
		Yes		AF	UGLK1004
		Yes	65	LF	UGLK1002
VB7000 Series		No	93	SV	SGVL
		Yes		SVK	SGVL
		No	236	SV	SGVL
		Yes		SVK	SGVL
VB7XXX-0-4-(7, 8)		Yes	236	AF	UGLK1000**
VB7XXX-0-4-7		Yes	93	LF	UGLK1150**
VB7XXX-0-4-8		Yes	93	LF	UGLK1150**
VB804X-0-1-8		No	173	NM	UGLK1002
		No	236	AM	UGLK1004
		Yes		AF	UGLK1004
		Yes	65	LF	UGLK1002
VB9000 Series		No	93	SV	SGVL
		Yes		LVK	SGVL
		No	236	SV	SGVL
		Yes		SVK	SGVL
VB9XXX-0-4-(7, 8)		Yes	236	AF	UGLK1000**
VB9XXX-0-4-7		Yes	93	LF	UGLK1150**
VB9XXX-0-4-8		Yes	93	LF	UGLK1150**
Belimo USA G2/G2S Series (OLD = pre April 2018)	1¼"	Yes	61	LF	UGLK1150**
		Yes	250	AF	UGLK1000**
		Yes	236	SVK	SGVL
		No	235	SV	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	61	LF	UGLK1150**
		Yes	250	AF	UGLK1000**
		Yes	236	SVK	SGVL
		No	235	SV	SGVL
VB304X-0-1-9		No	221	AM	UGLK1004
		Yes		AF	UGLK1004
		No	110	NM	UGLK1002
		Yes	40	LF	UGLK1002
VB7000 Series		No	236	SV	SGVL
		Yes		SVK	SGVL
VB7XXX-0-4-9		Yes	236	AF	UGLK1000**
		Yes	65	LF	UGLK1150**
VB804X-0-1-9		No	221	AM	UGLK1004
		Yes		AF	UGLK1004
		No	110	NM	UGLK1002
		Yes	40	LF	UGLK1002
VB9000 Series		No	236	SV	SGVL
		Yes		SVK	SGVL
VB9XXX-0-4-9		Yes	236	AF	UGLK1000**
		Yes	65	LF	UGLK1150**
Belimo USA G2/G2S Series (OLD = pre April 2018)	1½"	Yes	217	AF	UGLK1000**
		No	160	SV	SGVL
		Yes		SVK	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	217	AF	UGLK1000**
		No	160	SV	SGVL
		Yes		SVK	SGVL

All close-off pressures listed are approximate and based on valve condition and application.

**Not compatible with the new Belimo G2xxB-x, G2xxS-x, and G3xxB-x globe valves.

Siebe\Invensys\Barber Colman\Schneider

VB30.., VB7.. VB80.., VB9.., Belimo USA G2, Belimo USA G3 Series Series Valves

Linkage/Actuator Selection Guide

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB304X-0-1-10	1½"	No	77	NM	UGLK1002
		No	153	AM	UGLK1004
		Yes		AF	UGLK1004
		No	236	GM	UGLK1004
		Yes		GK	UGLK1004
		Yes	26	LF	UGLK1002
VB7000 Series		No	160	SV	SGVL
		Yes		SVK	SGVL
VB7XXX-0-4-10		Yes	211	AF	UGLK1000**
VB804X-0-1-10		No	77	NM	UGLK1002
		No	153	AM	UGLK1004
		Yes		AF	UGLK1004
		No	236	GM	UGLK1004
		Yes		GK	UGLK1004
		Yes	26	LF	UGLK1002
VB9XXX-0-4-10 (Post '94)*		Yes	79	AF	UGLK1016
		No	236	2*GM	UGLK1066
		Yes		2*GK	UGLK1066
		Yes	211	2*AF	UGLK1066
		No	160	GM	UGLK1016
		Yes		GK	UGLK1016
VB9XXX-0-4-10 (Pre '94)		No	236	2*GM	UGLK1064
		Yes		2*GK	UGLK1064
		No	211	GM	UGLK1008
		Yes		GK	UGLK1008
				2*AF	UGLK1064
		Yes	110	AF	UGLK1008
				SV	UGVL
		No		SVK	UGVL
Belimo USA G2/G2S Series (OLD = pre April 2018)	2"	Yes	122	AF	UGLK1000**
		No	90	SV	SGVL
		Yes	85	SVK	SGVL
Belimo USA G3 Series (OLD = pre April 2018)		Yes	122	AF	UGLK1000**
		No	90	SV	SGVL
		Yes	85	SVK	SGVL
VB304X-0-1-11		No	86	AM	UGLK1004
		Yes		AF	UGLK1004
		No	173	GM	UGLK1004
		Yes		GK	UGLK1004
		No	40	NM	UGLK1002
		Yes	14	LF	UGLK1002
VB7000 Series		No	85	SV	SGVL
		Yes		SVK	SGVL
VB7XXX-0-4-11		Yes	120	AF	UGLK1000**
VB804X-0-1-11		No	86	AM	UGLK1004
		Yes		AF	UGLK1004
		No	173	GM	UGLK1004
		Yes		GK	UGLK1004
		No	40	NM	UGLK1002
		Yes	14	LF	UGLK1002
VB9XXX-0-4-11 (Post '94)		No	89	GM	UGLK1016
		Yes		GK	UGLK1016
		No	211	2*GM	UGLK1066
		Yes		2*GK	UGLK1066
		Yes	110	2*AF	UGLK1066
		Yes	40	AF	UGLK1016
VB9XXX-0-4-11 (Pre '94)		No	211	2*GM	UGLK1064
		Yes		2*GK	UGLK1064
		No	110	GM	UGLK1008
		Yes		GK	UGLK1008
				2*AF	UGLK1064
		Yes	52	AF	UGLK1008
			110	SVK	UGVL
		No		SV	UGVL

**Not compatible with the new Belimo G2xxB-x, G2xxS-x, and G3xxB-x globe valves.

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB304X-0-2-12	2½"	Yes	75	2*AF	UGLK1072
		Yes	38	AF	UGLK1006
		No	136	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
VB304X-0-2-12	2½"	No	90	RV	FGVL
		Yes	80	AVK	FGVL
		No	45	EV	FGVL
VB804X-0-2-12		Yes	75	2*AF	UGLK1072
		Yes	38	AF	UGLK1006
		No	136	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
		No	90	RV	FGVL
		Yes	85	AVK	FGVL
		No	40	EV	FGVL
VB9XXX-0-4-12		No	75	GM	UGLK1010
		Yes		GK	UGLK1010
				2*AF	UGLK1070
		No	38	AM	UGLK1010
		Yes		AF	UGLK1010
		No	136	2*GM	UGLK1070
		Yes		2*GK	UGLK1070
VB9XXX-0-5-12		Yes	75	2*AF	UGLK1070
		Yes	38	AF	UGLK1010
		Yes	136	2*GK	UGLK1070
		No	150	RV	FGVL
		No	80	EV	FGVL
		Yes		AVK	FGVL
VB304X-0-2-13	3"	No	93	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
		No	70	RV	FGVL
		Yes	60	AVK	FGVL
		Yes	52	2*AF	UGLK1072
		No	35	EV	FGVL
		Yes	26	AF	UGLK1006
VB804X-0-2-13		No	93	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
		No	65	RV	FGVL
		Yes	60	AVK	FGVL
		Yes	52	2*AF	UGLK1072
		No	30	EV	FGVL
		Yes	26	AF	UGLK1006
VB9XXX-0-4-13		No	93	2*GM	UGLK1070
		Yes		2*GK	UGLK1070
		No	52	GM	UGLK1010
		Yes		GK	UGLK1010
				2*AF	UGLK1070
		No	26	AM	UGLK1010
		Yes		AF	UGLK1010
VB9XXX-0-5-13		Yes	93	2*GK	UGLK1070
		No	90	RV	FGVL
		Yes	52	2*AF	UGLK1070
		No	40	EV	FGVL
		Yes		AVK	FGVL
		Yes	26	AF	UGLK1010
VB304X-0-2-14	4"	No	52	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
		No	35	RV	FGVL
		Yes	30	AVK	FGVL
		Yes	26	2*AF	UGLK1072
		No	20	EV	FGVL
		Yes	14	AF	UGLK1006
VB804X-0-2-14		No	52	2*GM	UGLK1072
		Yes		2*GK	UGLK1072
		No	45	RV	FGVL
		Yes	30	AVK	FGVL

All close-off pressures listed are approximate and based on valve condition and application.

Siebe\Invensys\Barber Colman\Schneider

VB9.., VB30.., VB80.. Series Valves

Linkage/Actuator Selection Guide

Siemens\Landis\Powers

591, 599, 656, 658 Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
VB804X-0-2-14	4”	Yes	26	2*AF	UGLK1072
		No	20	EV	FGVL
		Yes	14	AF	UGLK1006
VB9XXX-0-5-14		Yes	22	2*AF	UGLK1074
		No	40	2*GM	UGLK1074
		Yes	40	2*GK	UGLK1074
		No	30	RV	FGVL
		Yes	25	AVK	FGVL
		No	15	EV	FGVL
		Yes	10	AF	UGLK1012
VB304X-0-2-15	5”	No	22	2*GM	UGLK1076
		Yes		2*GK	UGLK1076
		No	24	RV	FGVL
		No	15	EV	FGVL
		Yes	14	2*AF	UGLK1076
		Yes	10	AF	UGLK1014
VB804X-0-2-15		Yes	22	2*GK	UGLK1076
		No	20	RV	FGVL
		No	15	EV	FGVL
		Yes	14	GK	UGLK1014
				2*AF	UGLK1076
		Yes	10	AF	UGLK1014
VB9XXX-0-5-15		No	20	RV	FGVL
VB304X-0-2-16	6”	No	22	2*GM	UGLK1076
		Yes		2*GK	UGLK1076
		No	15	RV	FGVL
		No	13	EV	FGVL
		Yes	10	AF	UGLK1014
				2*AF	UGLK1076
VB804X-0-2-16		Yes	22	2*GK	UGLK1076
		No	22	RV	FGVL
		No	13	EV	FGVL
		Yes	10	AF	UGLK1014
				GK	
				2*AF	UGLK1076
VB9XXX-0-5-16		No	15	RV	FGVL
SIEMENS\LANDIS\POWERS					
591 Series	½”	No	236	LV	UGVL
		Yes		LVK	UGVL
				NF	UGLK1200
599 Flowrite		No	236	LV	UGVL
		Yes		LVK	UGVL
				NF	UGLK1208
599 MZ/MT Series		No	10-120	CM	UGSL1200
		Yes		TF	UGSL1200
656, 658 Series		Yes	236	LF	UGLK1350
591 Series	¾”	Yes	236	NF	UGLK1200
		No	211	LV	UGVL
		Yes		LVK	UGVL
599 Flowrite		No	236	AM	UGLK1208
		Yes		AF	UGLK1208
		No	211	LV	UGVL
		Yes		LVK	UGVL
599 MZ/MT Series		No	10-120	CM	UGSL1200
		Yes		TF	UGSL1200
656, 658 Series		Yes	211	LF	UGLK1350
591 Series	1”	No	236	SV	UGVL
				AM	UGLK1200
		Yes		SVK	UGVL
				AF	UGLK1200

All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
599 Flowrite	1"	Yes	173	NF	UGLK1208
		No	236	SV	UGVL
				AM	UGLK1208
		Yes		SVK	UGVL
				AF	UGLK1208
599 MZ/MT Series		No	10-120	CM	UGSL1200
		Yes		TF	UGSL1200
656, 658 Series		Yes	93	LF	UGLK1350
658 Series		No	93	LV	UGVL
		Yes		LVK	UGVL
		No	236	SV	UGVL
		Yes		SVK	UGVL
591 Series	1¼"	No	236	SV	UGVL
				AM	UGLK1200
		Yes		SVK	UGVL
				AF	UGLK1200
		Yes	160	NF	UGLK1200
599 Flowrite		No	221	AM	UGLK1208
		Yes		AF	UGLK1208
		No	236	SV	UGVL
		Yes		SVK	UGVL
		Yes	110	NF	UGLK1208
599 MZ/MT Series		No	10-120	CM	UGSL1200
		Yes		TF	UGSL1200
656, 658 Series		Yes	65	LF	UGLK1350
658 Series		No	236	SV	UGVL
		Yes		SVK	UGVL
591 Series	1½"	No	236	GM	UGLK1200
		Yes		GK	UGLK1200
		No	211	SV	UGVL
				AM	UGLK1200
		Yes		SVK	UGVL
				AF	UGLK1200
		No	209	GM	UGLK1202
		Yes		GK	UGLK1202
		No	104	AM	UGLK1202
		Yes		AF	UGLK1202
599 Flowrite		Yes	77	NF	UGLK1208
		No	153	SV	UGVL
				AM	UGLK1208
		Yes		SVK	UGVL
				AF	UGLK1208
		No	236	GM	UGLK1208
		Yes		GK	UGLK1208
		No	153	SV	UGVL
599 MZ/MT Series		No	10-120	CM	UGSL1200
		Yes		TF	UGSL1200
591 Series	2"	No	236	GM	UGLK1200
		Yes		GK	UGLK1200
		No	120	AM	UGLK1200
		Yes		AF	UGLK1200
		No	85	SV	UGVL
		Yes		SVK	UGVL
		No	52	SV	UGVL
		Yes		SVK	UGVL
599 Flowrite		No	86	AM	UGLK1208
		Yes		AF	UGLK1208
		No	173	GM	UGLK1208
		Yes		GK	UGLK1208
		No	85	SV	UGVL
		Yes		SVK	UGVL
		Yes	40	NF	UGLK1208
591 Series	2½"	No	211	RV	FGVL
		Yes		2*GK	UGLK1270

All close-off pressures listed are approximate and based on valve condition and application.

Siemens\Landis\Powers

591, 599 Series Valves

Linkage/Actuator Selection Guide

Warren Controls

100, 1800, Type 20-22, Type 23, Type 30-32 Series Valves

Linkage/Actuator Selection Guide

5 YEAR WARRANTY

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
591 Series	2½"	No	110	EV	FGVL
		Yes		AVK	FGVL
				2*AF	UGLK1270
599 Flowrite		Yes	211	2*GK	UGLK1272
		Yes	110	2*AF	UGLK1272
591 Series	3"	Yes	77	AVK	FGVL
				2*AF	UGLK1270
		No	136	RV	FGVL
		Yes		2*GK	UGLK1270
599 Flowrite		No	90	EV	FGVL
		Yes	77	2*AF	UGLK1272
		Yes	136	2*GK	UGLK1272
591 Series	4"	Yes	22	GK	UGLK1206
				2*AF	UGLK1274
		No	40	RV	FGVL
		Yes		2*GK	UGLK1274
		No	30	EV	FGVL
		Yes	10	AF	UGLK1206
599 Flowrite		Yes	22	GK	UGLK1212
				2*AF	UGLK1276
		Yes	40	2*GK	UGLK1276
		Yes	10	AF	UGLK1212
591 Series	5"	Yes	22	2*GK	UGLK1274
		No	25	RV	FGVL
		No	20	EV	FGVL
		Yes	14	GK	UGLK1206
				2*AF	UGLK1274
599 Flowrite		Yes	22	2*GK	UGLK1276
		Yes	14	GK	UGLK1212
				2*AF	UGLK1276
591 Series	6"	No	22	RV	FGVL
		Yes		2*GK	UGLK1274
		Yes	10	2*AF	UGLK1274
WARREN CONTROLS					
100 SGL SEAT	2½"	Yes	110	2*GK	UGLK2272
		No	52	RV	WGVL
		Yes		AVK	WGVL
		No	26	EV	WGVL
1800 3-Way		No	110	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	52	EV	WGVL
1800 BAL		No	110	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	52	EV	WGVL
Type 20-22		No	93	EV	WGVL
		No	185	RV	WGVL
		Yes	71	AVK	WGVL
Type 23		No	211	EV	WGVL
		Yes		AVK	WGVL
Type 30-32		No	93	EV	WGVL
		No	185	RV	WGVL
		Yes	71	AVK	WGVL
100 SGL SEAT	3"	Yes	70	2*GK	UGLK2272
		No	22	EV	WGVL
		No	40	RV	WGVL
		Yes		AVK	WGVL
1800 3-Way		No	70	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	40	EV	WGVL
1800 BAL		No	70	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	40	EV	WGVL

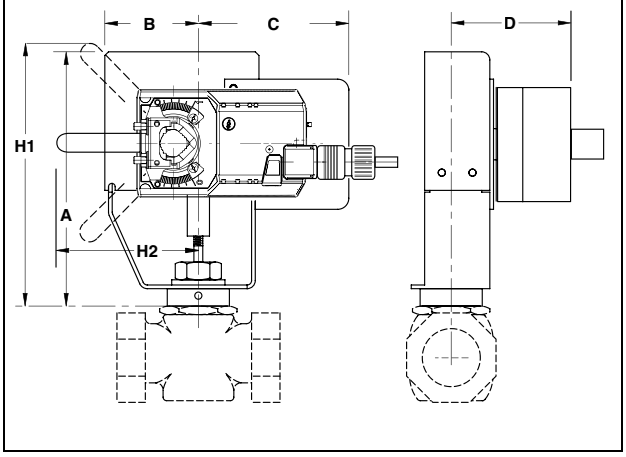
All close-off pressures listed are approximate and based on valve condition and application.

Valve Body Model	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
Type 20-22	3”	No	126	RV	WGVL
		No	65	EV	WGVL
		Yes	40	AVK	WGVL
Type 23		No	160	EV	WGVL
		Yes		AVK	WGVL
Type 30-32		No	126	RV	WGVL
		No	65	EV	WGVL
		Yes	40	AVK	WGVL
100 SGL SEAT	4”	No	22	RV	WGVL
		Yes		AVK	WGVL
		Yes	40	2*GK	UGLK2272
		No	10	EV	WGVL
		Yes		AF	UGLK2202
1800 3-Way		No	22	EV	WGVL
		No	40	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
1800 BAL		No	22	EV	WGVL
		No	40	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
Type 20-22		No	65	RV	WGVL
Type 23		No	236	EV	WGVL
		Yes		AVK	WGVL
Type 30-32		No	65	RV	WGVL
100 SGL SEAT	5”	Yes	22	2*GK	UGLK2272
		No	14	RV	WGVL
		Yes		AVK	WGVL
		Yes	10	AF	UGLK2202
1800 3-Way		No	22	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	14	EV	WGVL
1800 BAL		No	22	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	14	EV	WGVL
		Yes		AVK	WGVL
Type 20-22		No	40	RV	WGVL
Type 23		No	236	EV	WGVL
		Yes		AVK	WGVL
Type 30-32		No	40	RV	WGVL
100 SGL SEAT	6”	Yes	22	2*GK	UGLK2272
		No	10	RV	WGVL
		Yes		AF	UGLK2202
				AVK	WGVL
1800 3-Way		No	22	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	10	EV	WGVL
1800 BAL		No	22	2*GM	UGLK2272
		Yes		2*GK	UGLK2272
		No	10	EV	WGVL
Type 20-22		Yes	22	2*GK	UGLK2272
		Yes	10	2*AF	UGLK2272
Type 30		Yes	22	2*GK	UGLK2272
		Yes	10	2*AF	UGLK2272
Type 32		Yes	22	2*GK	UGLK2272
		Yes	10	2*AF	UGLK2272

All close-off pressures listed are approximate and based on valve condition and application.

Globe valve retrofits that cannot be matched to one of the Belimo UGLK part numbers; please use part number UGSP0000 for valves requiring single actuation and UGSP0002 for valves requiring dual actuation. These part numbers have no Bill of Materials (BOM) associated with them, therefore cannot be produced and shipped. When these two part numbers are quoted, sold and orders processed, the "Globe Valve Retrofit" form must be completed and accompany the order. Belimo's engineering department will establish the correct UGSP linkage number for production. UGSP0000 and UGSP0002 will NOT show up on final paperwork. The correct UGSP part number will be stated.

UGSP0000

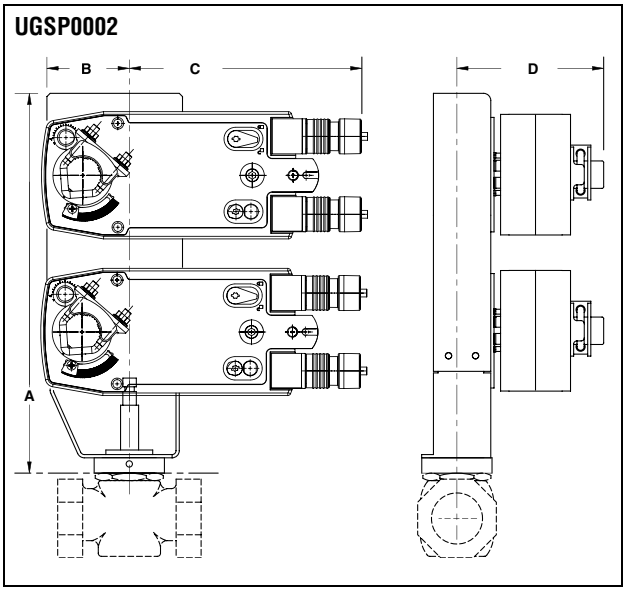


The single actuated globe retrofit linkage (shown left) depicts dimensional data for use in determining the envelope space required to mount the linkage. These dimensions do NOT include VALVE dimensions which will affect combined height requirements.

Dims H1 & **H2** are used only when override handles are utilized on the linkage system, and are not required for proper operation of the linkage system.

Dim A	7.5" [190] to 14" [356]	**Dim H1**	9.5" [242]
Dim B	3" [76]	**Dim H2**	9.5" [242]
Dim C	9" [229]		
Dim D	5" [127]		

UGSP0002



The dual actuated globe retrofit linkage (shown left) depicts dimensional data for use in determining the envelope space required to mount the linkage. These dimensions do NOT include VALVE dimensions which will affect combined height requirements.

Dim A	9.5" [241] to 19" [483]
Dim B	3" [76]
Dim C	9" [229]
Dim D	5" [127]

5 YEAR WARRANTY

Custom kits are designed to your unique specifications and are not returnable.

Instructions for Completing this Form

Note: Before completing this form, contact Belimo technical support to ensure a UGVL will fit your valve.

Required tools needed a caliper, thread gauge, retrofit form, flashlight, and ladder (if applicable).

Dimensions A, B, & C relate to the existing valve stem. **Dim A** is the stem diameter where it is NOT threaded (Style A), or grooved (Style B). **Dim B** refers to the length of the threaded region on the valve stem or top region of the grooved stem. **Dim C** is the actual thread specification for the threaded style stem (1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20 are typical). Dim C for the grooved style is the measurement of the stem groove height. This information is used to design a stem adapter which will connect the valve stem to the new linkage drive rack. It is important to specify the correct thread pattern, as incorrect data will prevent the stem adapter from attaching to your valve. If you cannot determine the correct thread spec, you can send a nut from the valve stem and we will match the correct specification. In some cases where older valves are concerned, some valve stems must be trimmed in the field to allow attachment of the linkage system. In these cases, a stem adapter is designed to "bite" into the smooth surface of the valve stem itself.

Dimensions D1, D2 & D3 are used to determine the height of the linkage assembly required to clear the valves' full stroke. A minimum of **two** dimensions are required to manufacture the correct linkage system for your valve. These dimensions also provide the information necessary to determine valve stroke. The **maximum stroke** from Belimo globe valve retrofit systems is 1.500".

Dimension E refers to the valve bonnet diameter (regardless if threads are present or not). Over time, impurities will react to the bonnet threads and corrode them to the point where they no longer meet the original thread specification. Because of this, we manufacture **slip fit** collars designed to **slide over** the bonnet threads, and locking setscrews are provided which "bite" into the original threads. All retrofit systems are designed to work with the raw valve body and do not account for previous actuation components which **must** be removed from the valve body before attaching the new linkage system.

Dimension F refers to the thread specification on threaded bonnets, and refers to the minor diameter on slip on bonnets (Landis type). This information helps us determine the length of the locking devices required to hold the collar onto the bonnet.

Dimensions G & H are used to determine working height of the bonnet region of your globe valve, while **Dim I** is used in calculating the minimum ID of the collar that will fit over the packing nut. Additionally, information about the environment and process in which this linkage system will be utilized should be provided.

All the requested information contained on this form is required to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage systems. Measurements rounded to the nearest 1/8 or 1/16 inch will not perform as well as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

DISCLAIMER:

We will do our best to provide a linkage system designed around your specifications and measurements. However, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

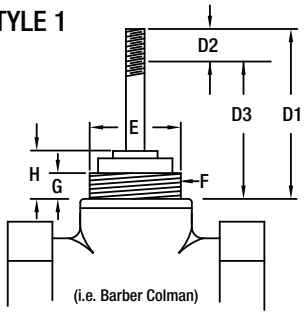
Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

Custom Globe Valve Retrofit Solution Form

UGSP Series

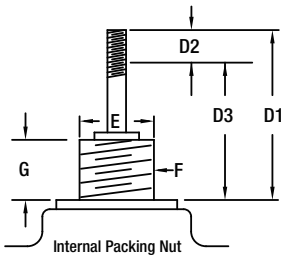
BELIMO

VALVE STYLE 1

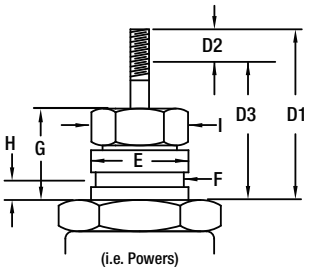


NOTE:
Nut "F" rotates on
valve bonnet

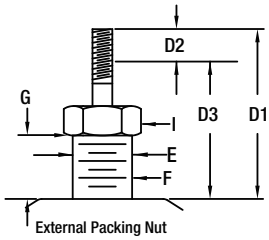
VALVE STYLE 2



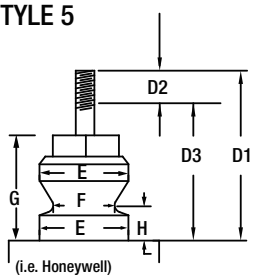
VALVE STYLE 3



VALVE STYLE 4



VALVE STYLE 5

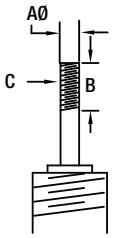


VALVE STYLE DIMENSIONS

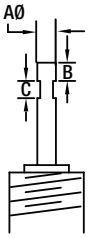
VALVE STYLE:		
DIM D1*: Stem up, length to base mount surface		
DIM D2: Stem stroke, stem up vs. stem down (D1-D3)		max. 1.500"
DIM D3: Stem down, length to base mount surface		
DIM E: Bonnet major diameter		
DIM F: Thread spec or bonnet minor diameter		
DIM G: Bonnet mount height		
DIM H: Bonnet minor diameter height		
DIM I: External packaging nut, across points		

*MAXIMUM LENGTH LINKAGE FRAME WILL ACCOMODATE UP TO 6.500" D1 MEASUREMENT VALVE STEMS LONGER THAN THIS NEED TO BE CUT.

STEM STYLE A



STEM STYLE B



STEM STYLE A or B: ☐ | STEM DIAMETER DIM A: ☐ | THREAD LENGTH DIM B: ☐ | TO STEM GROOVE DIM B: ☐ | THREADS PER INCH DIM C: ☐ | STEM GROOVE HEIGHT DIM C: ☐

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC Range:_____ ☐ PWM Range:_____

FAIL SAFE: ☐ YES ☐ NO

FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

VOLTAGE _____

COMPANY: _____ VALVE MANUFACTURER: _____ 2 WAY/3 WAY: _____

JOB NAME: _____ VALVE SERIES: _____ VALVE SIZE: _____

PO#: _____ VALVE MODEL: _____ MEDIA TEMP: _____

PHONE: _____ VALVE TAG/LOCATION: _____ MEDIA TYPE: _____

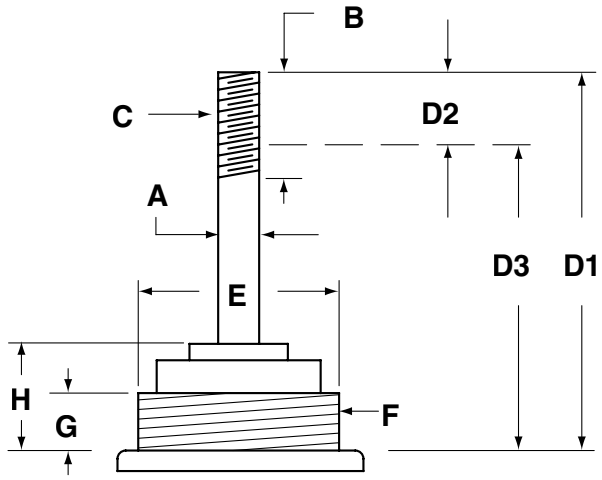
EMAIL: _____ QUANTITY: _____ SYSTEM PRESSURE: _____

NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

CUSTOM KITS ARE DESIGNED TO YOUR UNIQUE SPECIFICATIONS AND ARE **NOT RETURNABLE.**

COMPANY CONTACT/DIMENSIONS PROVIDED BY: _____ DATE: _____

Dimensions Needed



Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that the bonnet nut is permanently attached to the valve body, and that it also spins freely.

Follow these important steps to properly measure STYLE 1 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

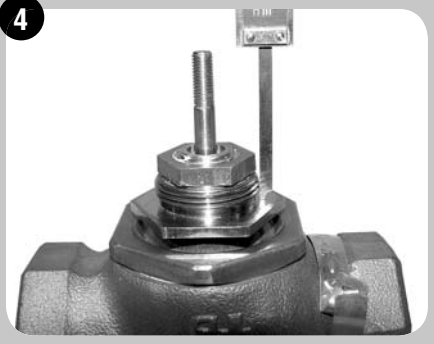
2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

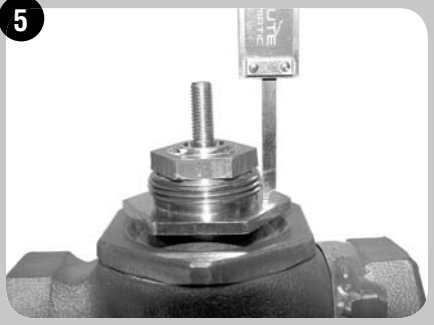
Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

4



Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5

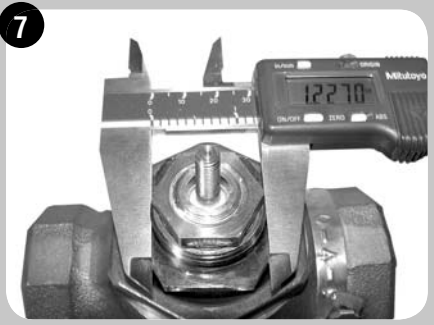


Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6

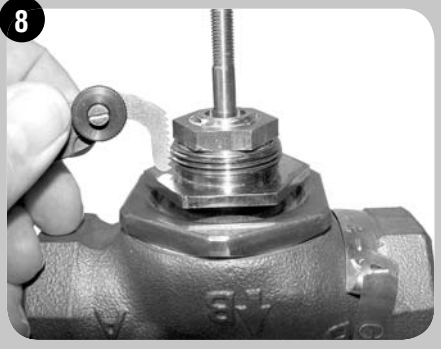
Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



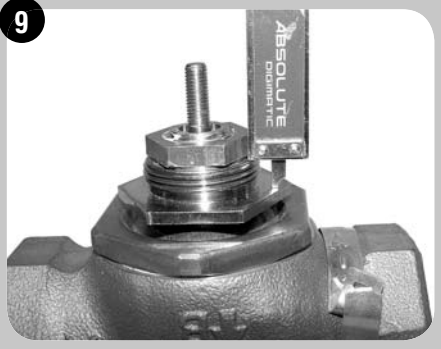
Dimension E is measured across the MAJOR diameter of the bonnet threads. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form.

8



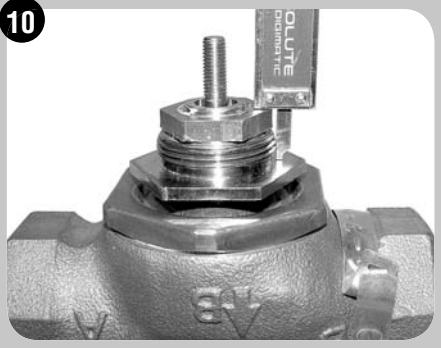
Dimension F is measured using a thread gage or by counting the number of threads per inch.

9



Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10

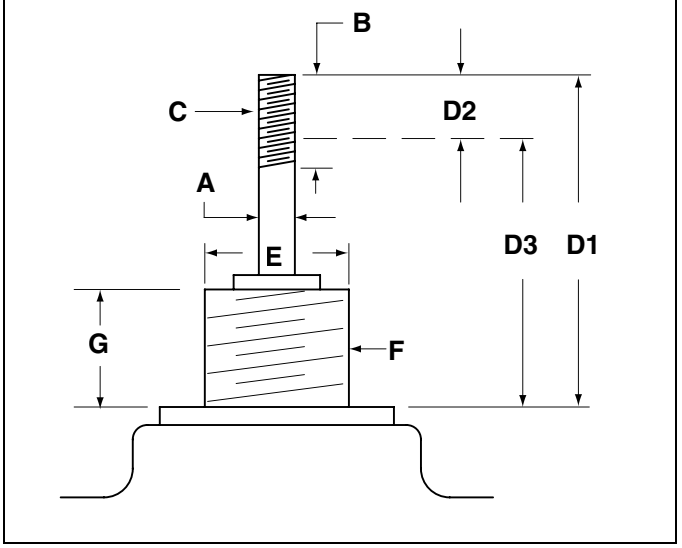


Dimension H is measured as the distance between the bonnet mounting base height and the TOP of the stem packing retainer.

Identification & Measurement of Existing Valves

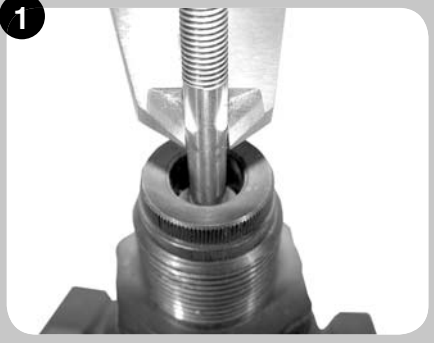
The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that the packing nut is inside the bonnet, and does NOT interfere with the bonnet threads.

Dimensions Needed



Follow these important steps to properly measure STYLE 2 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1



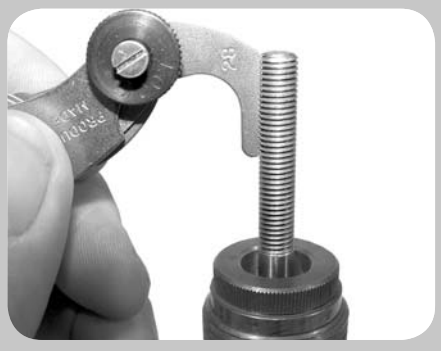
Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

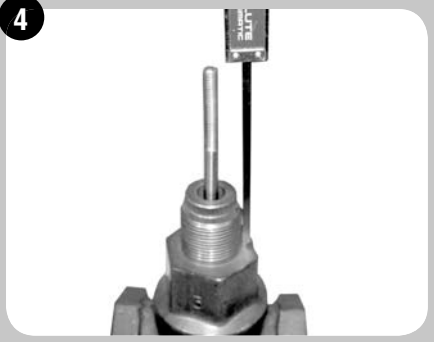
Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.



4



Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

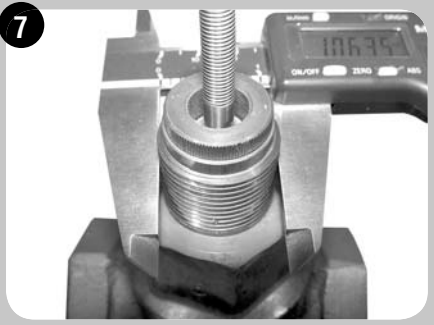
5

Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6

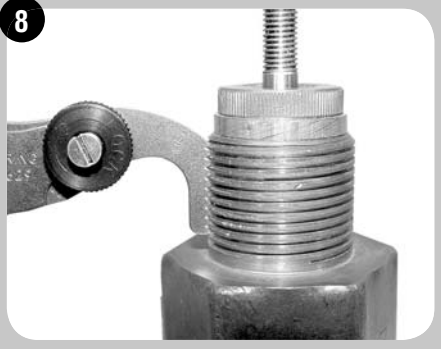
Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



Dimension E is measured across the MAJOR diameter of the bonnet threads. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form.

8

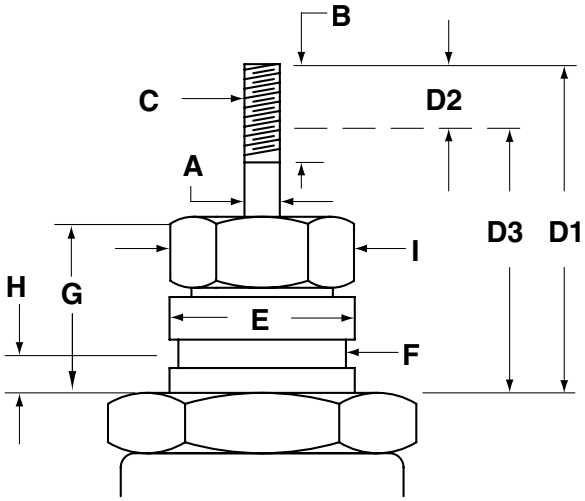


Dimension F is measured using a thread gage or by counting the number of threads per inch.

9

Measure Dimension G using the caliper depth gage, and record on the retrofit form.

Dimensions Needed



Identification & Measurement of Existing Valves

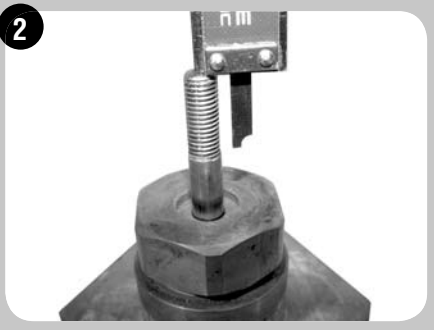
The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that there are no threads on the bonnet. The packing nut is smaller that the diameter of the bonnet. There is a groove in the bonnet used to secure the retrofit collar to the valve.

Follow these important steps to properly measure STYLE 3 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

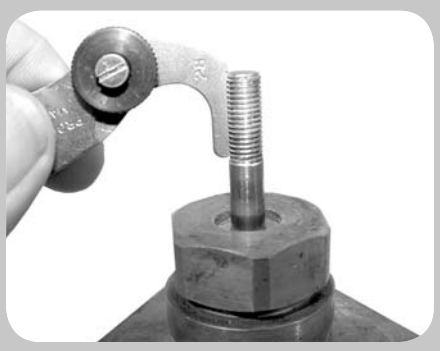
2



Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

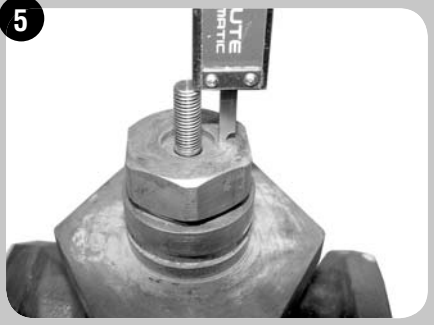
Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.



4

Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5

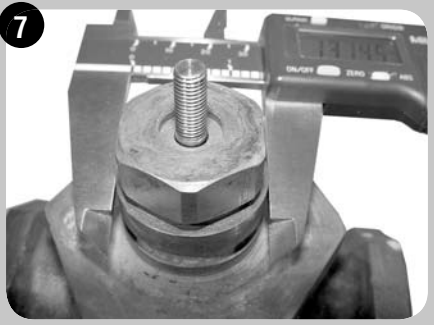


Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6

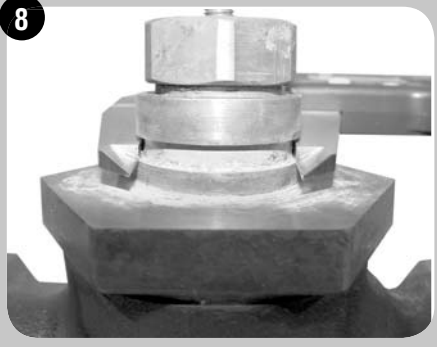
Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. This dimension should be checked both above and below the locking groove.

8

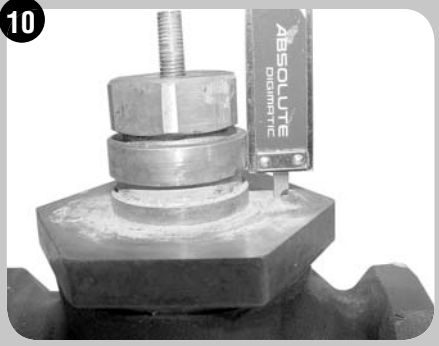


DImension F is measured using calipers across the MINOR diameter of the bonnet. This may be a square or a round groove. Measure the SMALLEST dimension of this groove.

9

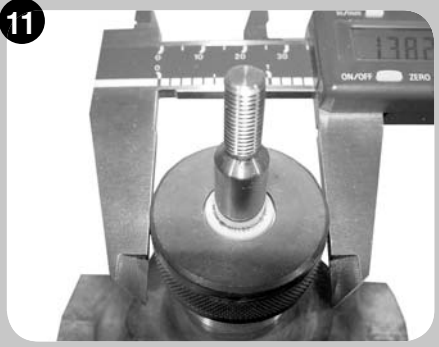
Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10



Measure Dimension H using the caliper depth gage, and record on the retrofit form.

11

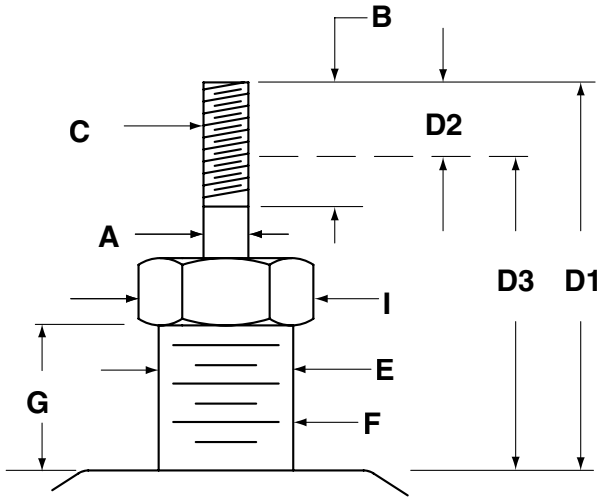


Dimension I is measured on the outside diameter of the external packing nut.

Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit. Note that many pneumatically operated valves have hardware that must be removed from the threaded bonnet area before measurements can be taken.

Dimensions Needed



Follow these important steps to properly measure STYLE 4 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

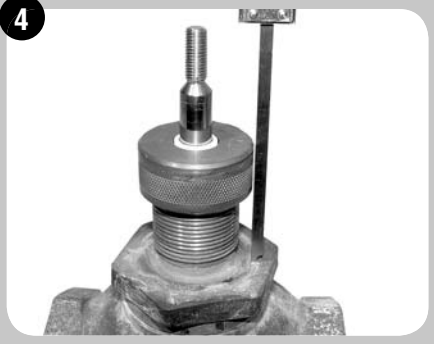
2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

4



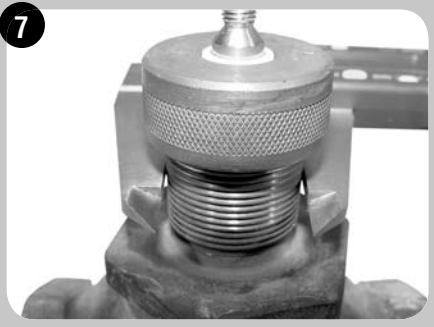
Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5

Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6 Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

7



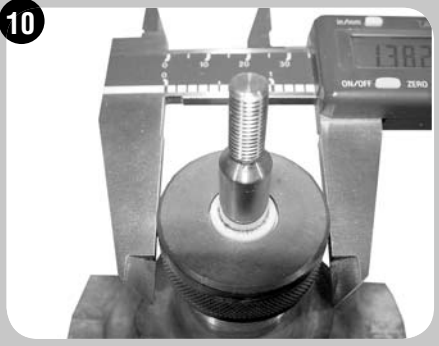
Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. Do NOT measure the diameter of the packing nut for this dimension.

8 DImension F is measured using a thread gage or by counting the number of threads per inch. It is easier to use a thread gage with the external packing nut removed.

9

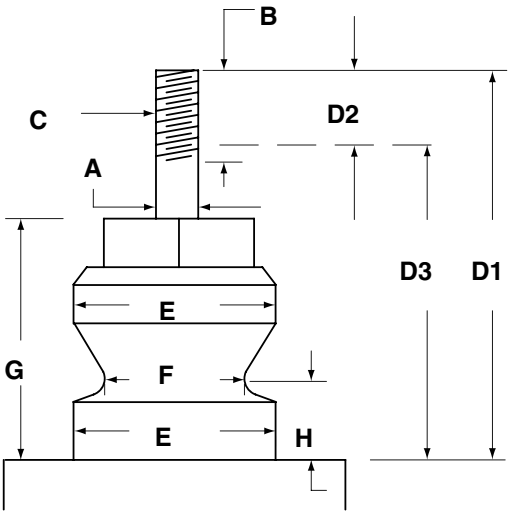
Measure Dimension G using the caliper depth gage to measure the distance between the bottom on the packing nut and the valve collar seating surface.

10



Dimension I is measured on the outside diameter or point of the external packing nut.

Dimensions Needed



Identification & Measurement of Existing Valves

The valve should be stripped down to its basic form, as shown. Remove all other linkage components in order to obtain correct dimensional data for the retrofit kit.Note that there are no threads on the bonnet. The packing nut is smaller that the diameter of the bonnet. There is a groove in the bonnet used to secure the retrofit collar to the valve.

Follow these important steps to properly measure STYLE 5 type globe valves for a retrofit linkage. Reference the photos and line drawing to help guide you through the data collection process.

1

Dimension A on the retrofit form is measured as shown, with the end of the calipers laying PERPENDICULAR to the center line of the valve stem. Record this reading to three decimal places.

2

Measure the LENGTH of the threaded area of the valve stem, and record this information for Dimension B on the retrofit form.

3

Using the WIDE area of the calipers, measure the MAJOR Diameter of the stem threads. Record this information for Dimension C on the retrofit form. Count how many threads per inch. Typical thread specs are 1/4-28, 3/8-24 & 1/2-20. If available, you should use a thread gage to determine the correct thread spec. Alternatively, you may send a valve stem nut to Belimo and we will determine the correct thread spec. Correct thread identification is important as this is the point of highest mechanical stress after the retrofitting has been completed.

UGSP Series Globe Valve Retrofit Solution

Retrofitting STYLE 5 Globe Valves Typical for Honeywell and Other Non-Threaded, Tapered Bonnet Valves

4

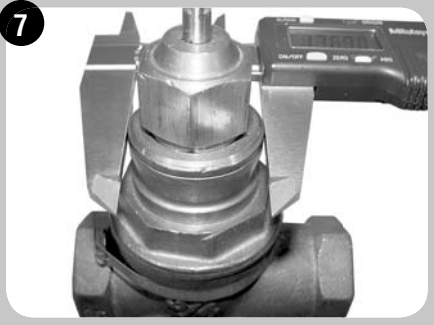
Dimension D1 on the retrofit form is measured as shown, with the depth gage used to measure the STEM UP distance to the bonnet base.

5

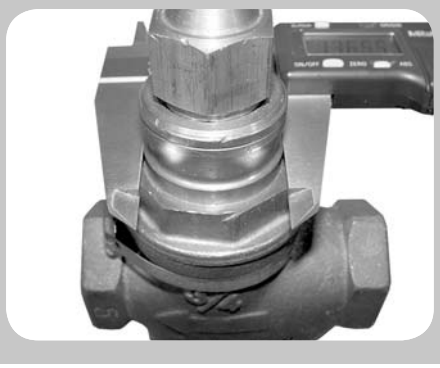
Dimension D3 on the retrofit form is measured as shown, with the depth gage used to measure the STEM DN distance to the bonnet base.

6 Dimension D2 on the retrofit form is the measured distance between the STEM UP and STEM DN heights, which gives the full travel of the valve. Only TWO of the three dimensions D1, D2 & D3 are needed.

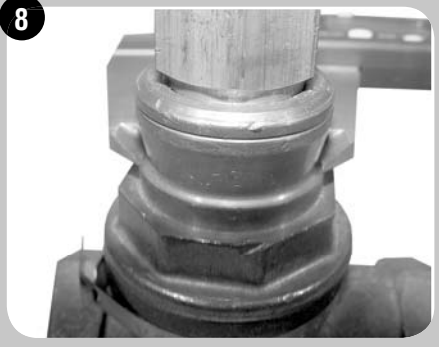
7



Dimension E is measured across the MAJOR diameter of the bonnet. Use the calipers as shown to determine the correct dimension and record accordingly on the retrofit form. This dimension should be checked both above and below the locking groove.



8



DImension F is measured using calipers across the MINOR diameter of the bonnet. This may be a square or a round groove. Measure the SMALLEST dimension of this groove.

9

Measure Dimension G using the caliper depth gage, and record on the retrofit form.

10

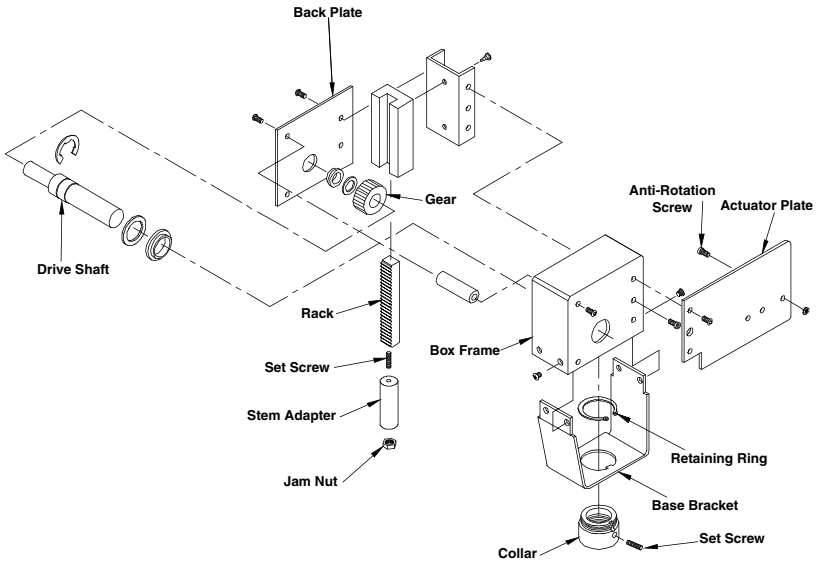
Measure Dimension H using the caliper depth gage, and record on the retrofit form.

UGLK Collars*			Most Commonly Used Valve Style				
Part Number	Inside Diameter	Description	Style 1	Style 2	Style 3	Style 4	Style 5
UGLK-COL-1005	1.000”	3 setscrews, for frame type		•			
UGLK-COL-1063	1.063”	3 setscrews, for frame type		•			
UGLK-COL-1100	1.100”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-1255	1.250”	3 setscrews, for frame type		•			
UGLK-COL-1315	1.315”	3 setscrews, for frame type, can be used with VB7 with shim			•		
UGLK-COL-1375	1.375”	3 setscrews, for frame type		•			
UGLK-COL-BC10	1.250”- 16 Thd.	Fits Siebe VB7/VB9. Use on frame type only	•				
UGLK-COL-HY02	1.370”	1 setscrew, for frame type					•
UGLK-COL-LG02	1.740”	1 setscrew, for frame type			•		
UGLK-COL-LG04	1.740”	1 setscrew, for frame type			•		
UGLK-COL-JC05	1.070”	3 setscrews, for frame type		•			
UGLK-COL-JC06	1.562- 14 Thd.	Threaded, brass		•			
UGLK-COL-JC08	0.760”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-JC15	1.070”	Ring, no setscrews		•			
UGLK-COL-0880	0.880”	3 setscrews, for frame type, counterbored top				•	
UGLK-COL-WNUT	1.375”- 20 Thd.	Replacement Warren nut. Will not go over damaged threads		•			
UGLK-COL-AD01	1.250”- 16 Thd.	Fits Siebe VB7/VB9. For VB7 frame only	•				
UGLK-COL-UNIV	Custom	3 setscrews, for frame type. Must be machined		•	•	•	•
UGSL-ADPT	Custom	Custom collar for UGSL1200. Must be machined					

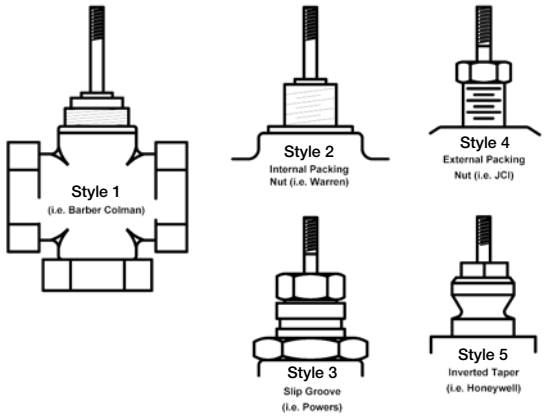
* Must reuse retaining clip and set screws.

UGLK Stem Adapters			Most Commonly Used Valve Style				
Part Number	Inside Diameter	Description	Style 1	Style 2	Style 3	Style 4	Style 5
UGLK-STM-1800	1/4”- 28 Stem Thd.	Stem adapter for 1/4”- 28 valve stems	•	•	•	•	•
UGLK-STM-1801	3/8”- 24 Stem Thd.	Stem adapter for 3/8”- 24 valve stems	•	•	•	•	•
UGLK-STM-1802	1/2”- 20 Stem Thd.	Stem adapter for 1/2”- 20 valve stems	•			•	•
UGLK-STM-1803	7/16”- 20 Stem Thd.	Stem adapter for 7/16”- 20 valve stems					•
UGLK-STM-1501	3/8”- 24 Stem Thd.	For Warren FLG valves with UGLK		•			
UGLK-STM-1805	3/8” OD Grooved	Landis 2.5-3” -599 Series			•		
UGLK-STM-2305	1/2” OD Grooved	Landis 4-6” -599 Series			•		
UGLK-STM-UNIV	Custom	Must be machined	•	•	•	•	•

UGLK Stem Adapters



UGLK Collars



Valve Accessories

Globe Valves

BELIMO

5 YEAR WARRANTY

WEATHER SHIELDS		GM	2* GM	LF	NF	AF	2* AF	GK	2* GK	LV/ SV	EV/ RV	LVK/ SVK	AVK
	**ZS-SPGV-60** For LF actuators on G2/G3 series			•									
	ZS-SPGV-10 For dual AF series actuators on flanged globe valves						•						
	**ZS-SPGV-20** For single NF, AF actuator series				•	•							
	ZS-SPGV-40 For GM, GK series on flanged globe valves	•						•					
	ZS-SPGV-50 For dual GM, GK series on flanged globe valves		•						•				
	**ZS-GV-001** For LV, SV actuators on NPT series									•		•	
	ZS-GV-002 For EV, RV, AVK actuator on flanged series										•		•

BATTERY BACKUP		EV	RV
	**NSV24 US** Battery backup module	•	•
	**NSV-BAT** 12VDC 1.2 AH battery (2 required)	•	•

AUXILIARY SWITCHES & POTENTIOMETERS		LR/LM	NR/NM	AR/AM	GR/GM	AK	GK/GKR	DR
	S1A Auxiliary switch 1x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•
	**S2A** Auxiliary switch 2x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•
	P140A GR Feedback potentiometer 140 Ω	•	•	•	•	•	•	•
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•
	P1000A GR Feedback potentiometer 1000 Ω	•	•	•	•	•	•	•
	**P2800A GR** Feedback potentiometer 2800 Ω	•	•	•	•	•	•	•
	P5000A GR Feedback potentiometer 5000 Ω	•	•	•	•	•	•	•
	P10000A GR Feedback potentiometer 10000 Ω	•	•	•	•	•	•	•

		LV/SV	EV	RV	LVK/SVK	AVK
	**S2A-GV** Auxiliary switch 2x SPDT, 3A (0.5A inductive) @ 250 VAC for LV, SV, EV, and AVK series actuators.	•	•	•	•	•

Butterfly Valve Retrofit Solutions

Belimo's butterfly retrofit solutions are designed to easily attach to the valve-mounting pad of competitor valves utilizing Belimo actuators. Butterfly valves can quickly and conveniently be restored without interruption in service and the removal of the valve, saving on down time and costs. Belimo retrofit solutions increase performance and efficiency of integrated building technology.

5 YEAR WARRANTY

How to Select a Butterfly Valve Retrofit Solution

Follow the four steps listed below when ordering a butterfly valve retrofit kit.

Example: Centerline C200 Series, **2½"** valve, using a **Non Fail-Safe** Belimo actuator.

1 Identify the **Valve Manufacturer, Valve Series** and **Valve Size.**

2 Determine the type of actuator you require: Belimo spring-return, non fail-safe, or electronic failsafe. Belimo spring and non fail-safe actuators are typically only available on smaller sizes.

Look at the solution using the Non Fail-Safe Belimo Actuator. Looking at the **UFLK3500,** the **GM** Series actuator will provide a **200 psi close-off** for the **2½" valve** with **Non Fail-Safe** actuation**.**

3 Use the actuator listings to make your final actuator selection. Decide between **GMB24-3-X1** and **GMB24-MFT-X1.**

ACTUATOR NOT INCLUDED IN THE LIST PRICE OF THE LINKAGE.

4 HOW TO ORDER: **Item 1 1pc UFLK3500**
Item 2 1pc GMB24-MFT-X1

5 YEAR WARRANTY

1 Select linkage solution based on the **Valve Number**, **Configuration**, and **Size**; select the proper **Linkage Solution** for your valve.

Centerline

C200 Round Top Series Butterfly Valves
Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Fail-Safe	Close-Off psi	Belimo Actuator Series	Belimo Linkage
C200 Round Top Series Butterfly Valves	2-way	2"	No	200	AM	UFLK3500
			Yes	200	AF	UFLK3500
		2½"	No	200	GM	UFLK3500
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500
		3"	No	200	GM	UFLK3500
			Yes	200	2*AF	UFLK3502
					GK	UFLK3500

UFLK3500
Example: **Centerline C200 Series, 2½"** valve using a **non fail-safe** Belimo actuation.

Choose correct linkage **UFLK3500**.

2 Verify close-off is suitable for application. Looking at the **UFLK3500**, the **GM** Series actuator will provide **200 psi close-off** for the **2½" valve**.

3 Select actuator based on needed control type. Decide between **GMB24-3-X1** and **GMB24-MFT-X1**. Consult actuator overview section for full details.

BASIC PRODUCTS

Model	Control Input	Feedback	Power Supply	Running Time(s) [Default]	VA Rating	Auxiliary Switch	Cable Length
GMB24-3-X1	On/Off, Floating Point	Add-on	24 VAC/DC	150 seconds	6	Add-on	3 ft.
GMB24-SR	2-10 VDC (4-20 mA*)	2-10 VDC	24 VAC/DC	150 seconds	6.5	Add-on	3 ft.
GMB24-MFT-X1	2-10 VDC	2-10 VDC	24 VAC/DC	150 seconds	7	Add-on	3 ft.

♦ Variable with MFT
‡ Prices do not reflect additional programming code surcharge.

NOTE: 10' and 16' cables are available with a $28.00 and $48.00 adder except for the PC and MFT95 version, which are only available with a 3' cable.

4 Complete Ordering Example:
Item 1: **UFLK3500**
Item 2: **GMB24-MFT-X1**

SY ACTUATORS

Series	Torque	Model	Run Time(s) 90°@60Hz	Power Supply	Duty Cycle	CONTROL TYPE			Feedback
						Proportional	3 Point/ Floating	On/Off	
SY4	3540 in-lbs [400 Nm]	SY4-110	18 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY4-24	25 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY4-220	18 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY4-24MFT	16 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY4-120MFT	18 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY4-230MFT	18 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY5	4430 in-lbs [500 Nm]	SY5-110	25 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY5-24	37 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY5-220	25 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY5-24MFT	22 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY5-120MFT	25 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY5-230MFT	25 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY6	5750 in-lbs [650 Nm]	SY6-110	29 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY6-220	28 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY6-120MFT	31 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY6-230MFT	31 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY7	8850 in-lbs [1000 Nm]	SY7-110	54 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY7-220	54 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY7-120MFT	55 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY7-230MFT	55 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY8	13280 in-lbs [1500 Nm]	SY8-110	58 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY8-220	55 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY8-120MFT	55 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
		SY8-230MFT	55 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY9	17700 in-lbs [2000 Nm]	SY9-110	62 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY9-220	63 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY9-120MFT	70 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
		SY9-230MFT	70 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY10	22130 in-lbs [2500 Nm]	SY10-110	63 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY10-220	64 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY10-120MFT	70 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
		SY10-230MFT	70 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY11	26550 in-lbs [3000 Nm]	SY11-110	65 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY11-220	64 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY11-120MFT	70 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
		SY11-230MFT	70 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
SY12	30980 in-lbs [3500 Nm]	SY12-110	65 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY12-220	63 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
		SY12-120MFT	70 seconds	120 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA
		SY12-230MFT	70 seconds	230 VAC ±10%, 50/60 Hz	50%	•			2-10 VDC/4-20 mA

Proportional actuators will accept 0-10 VDC, 2-10 VDC, or 4-20 mA control signals as standard.
All SY actuators are non-spring return, but can be used with NSV-SY back up systems for fail-safe applications.
These products carry a two year warranty when sold as part of an assembly or with a UFLK retrofit kit.

ROTARY ACTUATORS

SERIES	TORQUE	MODEL	Spring Return	Electronic Fail-Safe	Tandem Mounting Available	Control Input	Feedback Position	Power Supply
AF Series*	180 in-lbs [20 Nm]	AFBUP-X1	•		•	On/Off	-	24-240 VAC
		AFX24-MFT-X1	•		•	Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	24 VAC/DC
AM Series*	180 in-lbs [20 Nm]	AMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC
		AMX24-MFT-X1				Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	24 VAC/DC
GM Series*	360 in-lbs [40 Nm]	GMB24-3-X1				Floating Point, On/Off	-	24 VAC/DC
		GMX24-MFT-X1			•	Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	24 VAC/DC
GK Series*	360 in-lbs [40 Nm]	GKB24-3-X1		•		Floating Point, On/Off	-	24 VAC
		GKX24-MFT-X1		•	•	Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	24 VAC/DC
PR Series	1400 in-lbs [160 Nm]	PRBUP-3-T				Floating Point, On/Off	-	24-240 VAC/ 24-125 VDC, 50/60 Hz
		PRBUP-MFT-T				Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	
PK Series	1400 in-lbs [160 Nm]	PKRBUP-MFT-T		•		Variable with MFT (VDC, PWM, Floating Point, On/Off)	variable VDC	24-240 VAC/ 24-125 VDC, 50/60 Hz

***Please consult the Damper sections of the Product Guide and Price List for a full list of product offerings. Standard run times should be considered in the selection. All air side products are applicable for retrofit kits.**
Select "X1" actuators come with a handle.

MULTI-FUNCTION TECHNOLOGY

	P-CODE		Control Input	Running Time	Built-in Feedback
ROTARY ACTUATOR CODES	P-10001	A01	2-10 VDC	150 seconds	2-10 VDC
	P-10002	A02	0-10 VDC	150 seconds	0-10 VDC
	P-10028	A28	0-10 VDC	150 seconds	0-10 VDC
	P-10063	A63	0.5-4.5 VDC	150 seconds	0.5-4.5 VDC
	P-10064	A64	5.5-10 VDC	150 seconds	5.5-10 VDC
	P-20002	W02	0.02-5.00 seconds PWM	150 seconds	2-10 VDC
	P-20003	W03	0.10-25.5 seconds PWM	150 seconds	2-10 VDC
	P-30001	F01	Floating Point	150 seconds	2-10 VDC
	P-40002	J02	On/Off	150 seconds	2-10 VDC

Consult Belimo for programming code, if not shown on chart.

SY MULTI-FUNCTION TECHNOLOGY

Description	MFT-CODE	Control Input	Built-in Feedback	Loss of Signal	Running Time
MFT	ACE	2-10 VDC	2-10 VDC	stop	actuator(s) constant
MFT	ACF	0.5-10 VDC	0.5-10 VDC	stop	actuator(s) constant
MFT	ACG	4-20 mA	4-20 mA	stop	actuator(s) constant
MFT	ACH	4-20 mA	2-10 VDC	stop	actuator(s) constant
MFT	ACJ	2-10 VDC	2-10 VDC	open	actuator(s) constant
MFT	ACK	0.5-10 VDC	0.5-10 VDC	open	actuator(s) constant
MFT	ACL	4-20 mA	4-20 mA	open	actuator(s) constant
MFT	ACM	4-20 mA	2-10 VDC	open	actuator(s) constant
MFT	ACN	2-10 VDC	2-10 VDC	close	actuator(s) constant
MFT	ACP	0.5-10 VDC	0.5-10 VDC	close	actuator(s) constant
MFT	ACR	4-20 mA	4-20 mA	close	actuator(s) constant
MFT	ACS	4-20 mA	2-10 VDC	close	actuator(s) constant

Standard delivery may vary, please consult your customer service representative for the latest lead time(s).

5 YEAR WARRANTY

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 2-way competitor valves utilizing Belimo AF and GM series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard air-side actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to the actuator wiring guides on Master/Slave wiring for dual mounted actuators.

Technical Data	UFLK... / UFSP
Materials:	
Plate	stainless steel
Coupling	stainless steel
Shafts	stainless steel
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water max steam inlet 50 psi
Weight	4.8 lbs [2.2 kg]

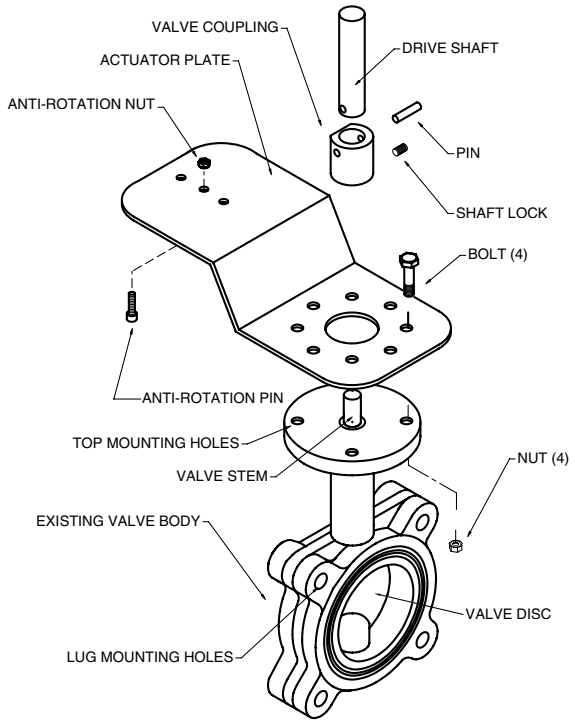
Suitable Actuators	Close-Off Ranges
AF Series	50-200 psi
GM Series	50-300 psi
GK Series	50-300 psi
2*AF Series	50-300 psi
2*GM Series	50-740 psi
2*GK Series	50-740 psi

Competitor Valves**

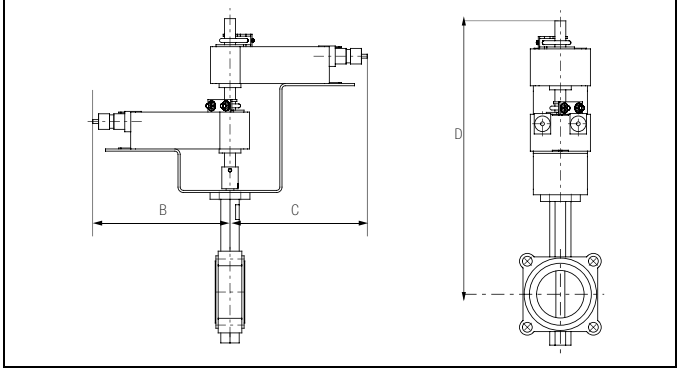
Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 96-105 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and cross reference of each valve.

UFLK / UFSP Parts Breakdown- Single Shown



UFLK / UFSP Dual Shown



Maximum Dimensions (Inches)

Size	B	C	D(Max)	Actuator
2"	9	9	19.5	AF/GK
2"	7	7	15	AMB(X)
2½"	9	9	20	AF
2½"	9	9	20	2*AF/2*GK
2½"	7	7	15.5	AMB(X)
3"	7	7	16	AMB(X)
3"	8	8	16	GMB(X)
3"	9	9	20.5	2*AF/2*GK
4"	8	8	17	GMB(X)
4"	9	9	21	2*AF/ 2*GK
4"	8	8	21	2*GMB(X)
5"	8	8	17.5	GMB(X)
5"	9	9	22	2*AF/ 2*GK
6"	8	8	22.5	GMB(X)

UFLK.../UFSP... Retrofit Linkage for Butterfly Valves

For 3-Way AF and GM Series Actuators

5 YEAR WARRANTY

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	configuration specific (X10-X35)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	7 lbs [3.2 kg]

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 3-way competitor valves utilizing Belimo AF and GM series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard air-side actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to the actuator wiring guides on Master/Slave wiring for dual mounted actuators.

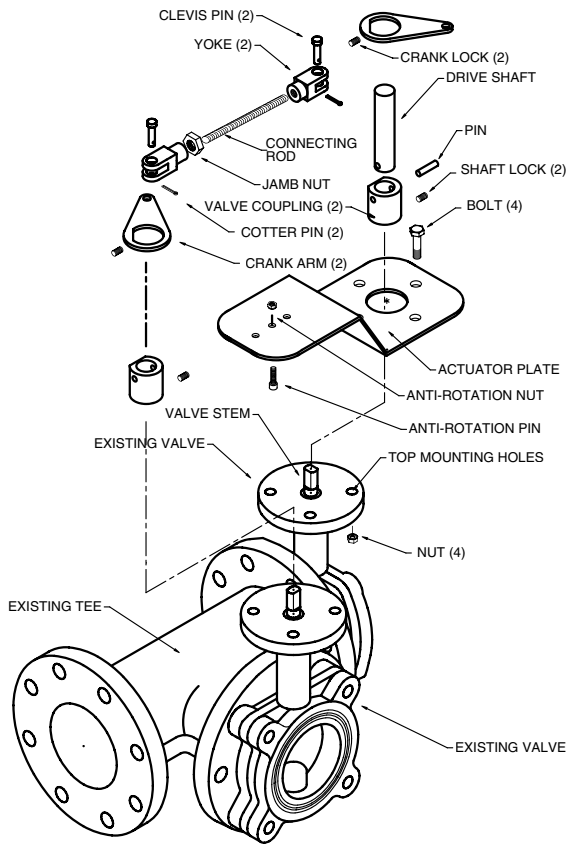
Suitable Actuators	Close-Off Ranges
AF Series	50-200 psi
GM Series	50-300 psi
GK Series	50-300 psi
2*AF Series	50-300 psi
2*GM Series	50-740 psi
2*GK Series	50-740 psi

Competitor Valves**

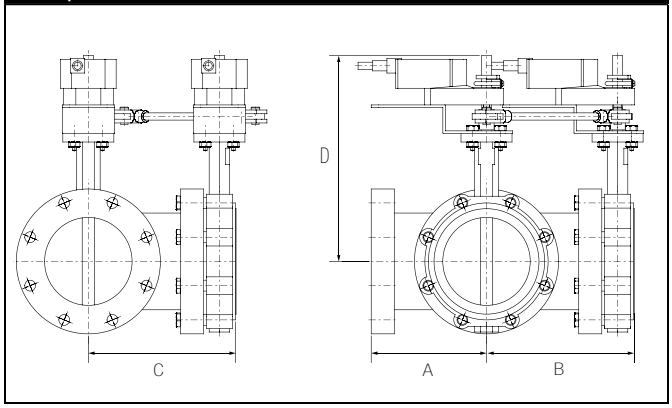
Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 96-105 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and cross reference of each valve.

UFLK / UFSP Parts Breakdown- Single Shown



UFLK / UFSP Dual Shown



Maximum Dimensions (Inches)

Size	A	B	C	D(Max)	Actuator
2"	7	9	9	19.5	AF/GK
2"	5	7	7	15	AMB(X)
2½"	7	9	9	20	AF
2½"	7	9	9	20	2*AF/2*GK
2½"	5	7	7	15.5	AMB(X)
3"	5	7	7	16	AMB(X)
3"	6	8	8	16	GMB(X)
3"	7	9	9	20.5	2*AF/2*GK
4"	6	8	8	17	GMB(X)
4"	7	9	9	21	2*AF/ 2*GK
4"	6	8	8	21	2*GMB(X)
5"	6	8	8	17.5	GMB(X)
5"	7	9	9	22	2*AF/ 2*GK
6"	6	8	8	22.5	GMB(X)

5 YEAR WARRANTY

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 2-way competitor valves utilizing Belimo SY industrial series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard SY actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuator's directional switch can be flipped to change the rotation. The SY is NEMA 4 rated and can be used outdoors.

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	360° mountable
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	7 lbs [3.2 kg]

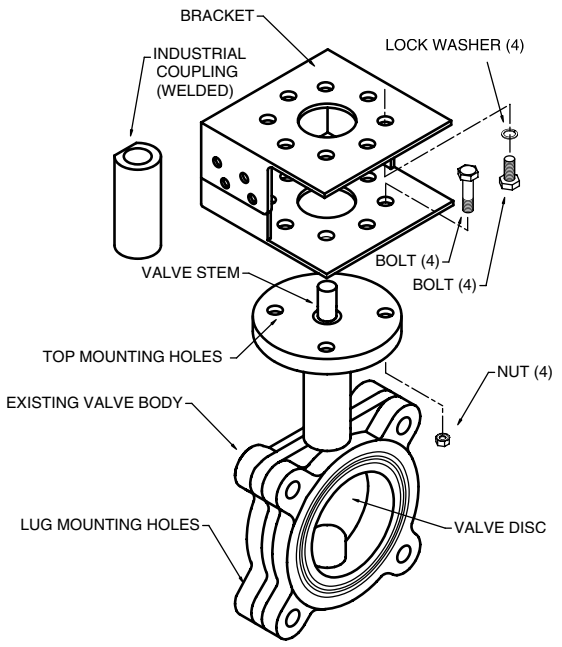
Suitable Actuators	Close-Off Ranges
PR/PKR Series	50-200 psi
SY4 Series	50-780 psi
SY5 Series	150-300 psi
SY6-SY12 Series	150-780 psi

Competitor Valves**

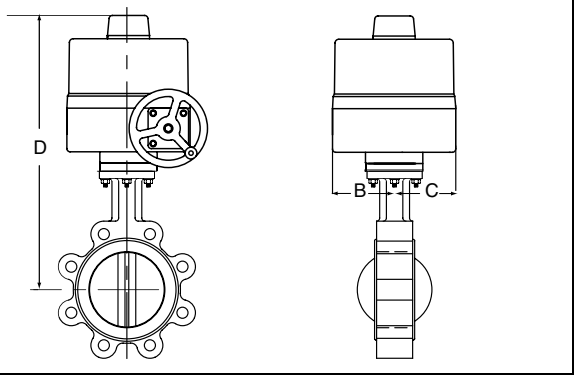
Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 96-105 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and cross reference of each valve.

UFLK / UFSP Parts Breakdown



UFLK / UFSP



Maximum Dimensions (Inches)

Size	B	C	D(Max)	Actuator
2"	3.94	3.94	18.5	PR/PKR
2½"	3.94	3.94	18.75	PR/PKR
3"	3.94	3.94	19	PR/PKR
4"	3.94	3.94	19.75	PR/PKR
5"	3.94	3.94	20.25	PR/PKR
6"	3.94	3.94	20.75	PR/PKR
8"	3.94	3.94	22.25	PR/PKR
8"	11.37	11.37	29	SY4...
10"	13.58	13.58	30	SY4...
12"	15.01	15.01	32	SY4...
12"	15.01	15.01	32	SY5...
14"	17.02	17.02	33	SY6...
16"	18.39	18.39	38.5	SY7...
18"	20.63	20.63	39.5	SY9...
20"	23	23	41.5	SY9...
24"	27.9	27.9	53.25	SY12...

UFLK.../UFSP... Retrofit Linkage for Butterfly Valves

For 3-way SY, PR and PKR Industrial Actuators

5 YEAR WARRANTY

Application

The UFLK/UFSP retrofit kit is designed to easily attach to the valve mounting pad on select 3-way competitor valves utilizing Belimo SY industrial series actuators. This kit will help to restore service without removal of the valve, saving down time. The UFLK/UFSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves.

Default/Configuration

The actuator is sold separately from the linkage. This allows users to select any actuator with the desired control signal. Since the linkage utilizes standard SY actuators, they can be purchased at any time and mounted in the field.

Operation

The UFLK/UFSP and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the disc to fully open or close. When directional needs vary, the actuator's directional switch can be flipped to change the rotation. The SY is NEMA 4 rated and can be used outdoors.

Technical Data	UFLK... / UFSP
Materials:	
Bracket	stainless steel
Couplings	stainless steel
Crank arms	steel
Yoke	steel
Rod	steel
Mounting position	configuration specific (X10-X35)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Servicing	chilled or hot water
Weight	12.6 lbs [5.73 kg]

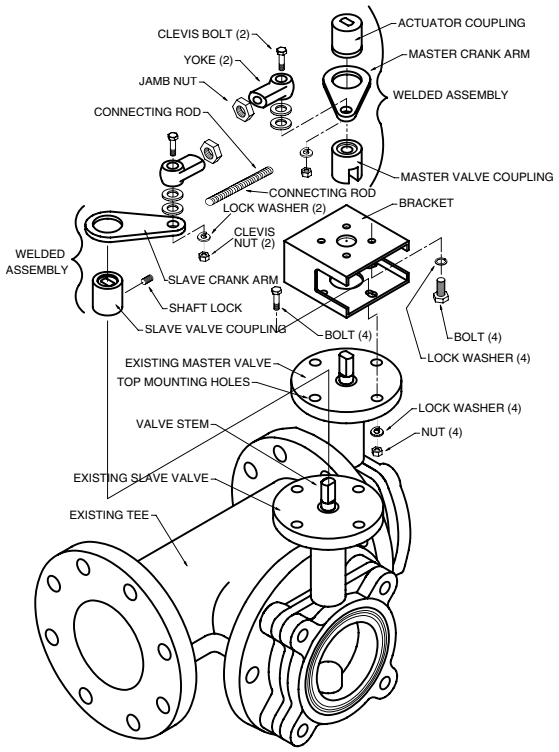
Suitable Actuators	Close-Off Ranges
PR/PKR Series	50-200 psi
SY4 Series	50-780 psi
SY5 Series	150-300 psi
SY6-SY12 Series	150-780 psi

Competitor Valves**

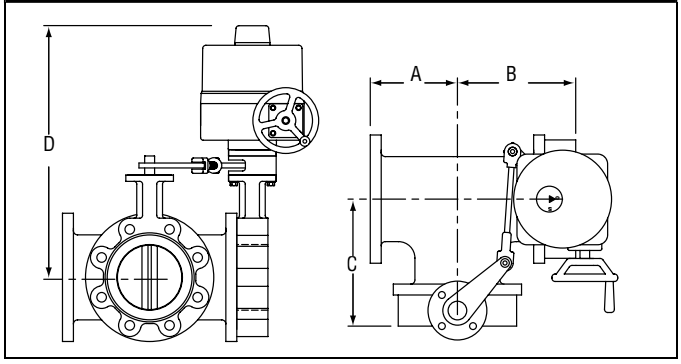
Bray	Victaulic	Nibco
PDC	Keystone	Flowseal
Centerline	JCI	Milwaukee

**Consult pages 96-105 of the Retrofit Technical Documentation and/or SelectPro for close-off pressures and cross reference of each valve.

UFLK / UFSP Parts Breakdown



UFLK / UFSP



Maximum Dimensions (Inches)

Size	A	B	C	D(Max)	Actuator
2"	4.15	6.15	6.15	18.25	PR/PKR
2½"	4.76	6.76	6.76	18.75	PR/PKR
3"	5.28	7.28	7.28	19	PR/PKR
4"	6.55	8.55	8.55	19.75	PR/PKR
5"	7.64	9.64	9.64	20.25	PR/PKR
6"	8.19	10.19	10.19	20.75	PR/PKR
8"	9.37	11.37	11.37	22.25	PR/PKR
8"	9.37	11.37	11.37	29	SY4...
10"	11.58	13.58	13.58	30	SY4...
12"	13.01	15.01	15.01	32	SY4...
12"	13.01	15.01	15.01	32	SY5...
14"	15.02	17.02	17.02	33	SY6...
16"	16.39	18.39	18.39	38.5	SY7...
18"	18.63	20.63	20.63	39.5	SY9...
20"	21	23	23	41.5	SY9...
24"	25.9	27.9	27.9	53.25	SY12...

Valve Body Model	Valve Configuration	Fail-Safe	Size	Belimo Linkage	Belimo Actuator Series
30/31 Series Butterfly Valves	2-way	No	2”	UFLK1100	AM
				UFLKP004	PR
			2½”	UFLK1100	GM
				UFLKP004	PR
			3”	UFLK1102	2*GM
				UFLKP004	PR
			4”	UFLK1108	2*GM
				UFLKP008	PR
			5”	UFLKP014	PR
			6”	UFLKP014	PR
			8”	UFLK1138	SY4
			10”	UFLK1140	SY4
			12”	UFLK1142	SY6
			14”	UFLK1144	SY7
			16”	UFLK1144	SY8
			18”	UFLK1146	SY9
			20”	UFLK1146	SY10
		Yes	2”	UFLK1102	2*AF
			2½”	UFLK1102	2*AF
				UFLK1100	GK
			3”	UFLK1102	2*GK
			4”	UFLK1108	2*GK
			5”	UFLKP014	PKR
			6”	UFLKP014	PKR
	3-way	No	2”	UFLKP104	PR
			2½”	UFLK4102	2*GM
				UFLKP104	PR
			3”	UFLK4102	2*GM
				UFLKP104	PR
			4”	UFLKP108	PR
			5”	UFLK4136	SY4
			6”	UFLK4136	SY4
			8”	UFLK4138	SY5
			10”	UFLK4140	SY6
			12”	UFLK4142	SY7
			14”	UFLK4144	SY8
			16”	UFLK4146	SY9
			18”	UFLK4148	SY11
			20”	UFLK4148	SY12
		Yes	2”	UFLK4102	2*AF
			2½”	UFLK4102	2*GK
			3”	UFLK4102	2*GK
40/41 Series Butterfly Valves	2-way	No	2½”	UFLK1200	2*GM
				UFLKP008	PR
			3”	UFLK1200	2*GM
				UFLKP008	PR
			4”	UFLK1200	2*GM
				UFLKP008	PR
			5”	UFLKP014	PR
			6”	UFLK1228	SY4
			8”	UFLK1230	SY4
			10”	UFLK1232	SY6
			12”	UFLK1234	SY7
			14”	UFLK1236	SY8
			16”	UFLK1238	SY9
			18”	UFLK1240	SY11
			20”	UFLK1242	SY12
		Yes	2½”	UFLK1200	2*GK
			3”	UFLK1200	2*GK
			4”	UFLK1200	2*GK
	3-way	No	2½”	UFLK4200	2*GM
				UFLKP108	PR
			3”	UFLK4200	2*GM
				UFLKP108	PR

Valve Body Model	Valve Configuration	Size	Fail-Safe	Belimo Linkage	Belimo Actuator Series
40/41 Series Butterfly Valves	3-way	No	4”	UFLKP108	PR
			5”	UFLK4224	SY4
			6”	UFLK4224	SY4
			8”	UFLK4226	SY5
			10”	UFLK4228	SY7
			12”	UFLK4230	SY8
			14”	UFLK4232	SY10
			16”	UFLK4234	SY12
		Yes	2½”	UFLK4200	2*GK
			3”	UFLK4200	2*GK
CENTERLINE					
C200 Round Top Series Butterfly Valves	2-way	No	2”	UFLK3500	AM
				UFLKP030	PR
			2½”	UFLK3500	GM
				UFLKP030	PR
			3”	UFLK3500	GM
				UFLKP030	PR
			4”	UFLK3508	2*GM
				UFLKP031	PR
			5”	UFLKP032	PR
			6”	UFLKP032	PR
			8”	UFLK3546	SY4
			10”	UFLK3548	SY4
			12”	UFLK3550	SY5
			14”	UFLK3550	SY5
			16”	UFLK3552	SY7
			18”	UFLK3554	SY8
			20”	UFLK3556	SY8
			24”	UFLK3558	SY10
		Yes	2”	UFLK3500	AF
			2½”	UFLK3502	2*AF
				UFLK3500	GK
			3”	UFLK3502	2*AF
				UFLK3500	GK
			4”	UFLK3508	2*GK
			5”	UFLKP032	PKR
			6”	UFLKP032	PKR
	3-way	No	2”	UFLK6500	AM
				UFLKP130	PR
			2½”	UFLK6500	GM
				UFLKP130	PR
			3”	UFLK6502	2*GM
				UFLKP130	PR
			4”	UFLK6508	2*GM
				UFLKP131	PR
			5”	UFLKP132	PR
			6”	UFLK6544	SY4
			8”	UFLK6546	SY4
			10”	UFLK6548	SY5
			12”	UFLK6550	SY7
			14”	UFLK6550	SY7
			16”	UFLK6552	SY8
			18”	UFLK6554	SY9
			20”	UFLK6556	SY10
		Yes	2”	UFLK6502	2*AF
			2½”	UFLK6502	2*AF
				UFLK6500	GK
			3”	UFLK6502	2*GK
			4”	UFLK6508	2*GK

Valve Body Model	Valve Configuration	Fail-Safe	Size	Belimo Linkage	Belimo Actuator Series
C200 Square Top Series Butterfly Valves	2-way	No	2”	UFLK1300	AM
				UFLKP004	PR
			2½”	UFLK1300	GM
				UFLKP004	PR
			3”	UFLK1300	GM
				UFLKP004	PR
			4”	UFLK1308	2*GM
				UFLKP011	PR
			5”	UFLKP016	PR
			6”	UFLKP016	PR
			8”	UFLK1346	SY4
			10”	UFLK1348	SY4
			12”	UFLK1350	SY5
			14”	UFLK1350	SY5
			16”	UFLK1352	SY7
			18”	UFLK1354	SY8
			20”	UFLK1356	SY8
			24”	UFLK1358	SY10
		Yes	2”	UFLK1300	AF
			2½”	UFLK1302	2*AF
				UFLK1300	GK
			3”	UFLK1302	2*AF
				UFLK1300	GK
			4”	UFLK1308	2*GK
			5”	UFLKP016	PKR
			6”	UFLKP016	PKR
	3-way	No	2”	UFLK4300	AM
				UFLKP104	PR
			2½”	UFLK4300	GM
				UFLKP104	PR
			3”	UFLK4302	2*GM
				UFLKP104	PR
			4”	UFLK4308	2*GM
				UFLKP111	PR
			5”	UFLKP116	PR
			6”	UFLK4346	SY4
			8”	UFLK4348	SY4
			10”	UFLK4350	SY5
			12”	UFLK4352	SY7
			14”	UFLK4352	SY7
			16”	UFLK4354	SY8
			18”	UFLK4356	SY9
			20”	UFLK4358	SY10
		Yes	2”	UFLK4302	2*AF
			2½”	UFLK4302	2*AF
				UFLK4300	GK
			3”	UFLK4302	2*GK
			4”	UFLK4308	2*GK
C225 Square Top Series Butterfly Valves	2-way	No	2”	UFLK1400	GM
				UFLKP004	PR
			2½”	UFLK1400	GM
				UFLKP004	PR
			3”	UFLK1400	GM
				UFLKP004	PR
			4”	UFLK1408	2*GM
				UFLKP011	PR
			5”	UFLKP016	PR
			6”	UFLK1444	SY4
			8”	UFLK1446	SY4

Valve Body Model	Valve Configuration	Size	Fail-Safe	Belimo Linkage	Belimo Actuator Series
C225 Square Top Series Butterfly Valves	2-way	No	10”	UFLK1448	SY5
			12”	UFLK1450	SY6
			14”	UFLK1452	SY7
			16”	UFLK1454	SY9
			18”	UFLK1456	SY10
			20”	UFLK1458	SY10
		Yes	2”	UFLK1402	2*AF
				UFLK1400	GK
			2½”	UFLK1402	2*AF
				UFLK1400	GK
			3”	UFLK1402	2*AF
				UFLK1400	GK
			4”	UFLK1408	2*GK
				UFLKP011	PKR
			5”	UFLKP016	PKR
	3-way	No	2”	UFLK4400	GM
				UFLKP104	PR
			2½”	UFLK4400	GM
				UFLKP104	PR
			3”	UFLK4402	2*GM
				UFLKP104	PR
			4”	UFLKP111	PR
			5”	UFLKP116	PR
			6”	UFLK4444	SY4
			8”	UFLK4446	SY5
			10”	UFLK4448	SY7
			12”	UFLK4450	SY8
			14”	UFLK4452	SY8
			16”	UFLK4454	SY12
		Yes	2”	UFLK4400	GK
			2½”	UFLK4400	GK
			3”	UFLK4402	2*GK
				UFLKP104	PKR
			4”	UFLKP111	PKR
			5”	UFLKP116	PKR
JOHNSON CONTROLS					
VF.. (H) Series Butterfly Valves	2-way	No	2”	UFLK2100	GM
			2½”	UFLK2100	GM
				UFLKP007	PR
			3”	UFLK2100	GM
				UFLKP007	PR
			4”	UFLK2108	2*GM
				UFLKP009	PR
			5”	UFLKP015	PR
			6”	UFLK2144	SY4
			8”	UFLK2158	SY4
			12”	UFLK2148	SY7
			14”	UFLK2156	SY7
			18”	UFLK2152	SY10
			20”	UFLK2154	SY10
		Yes	2”	UFLK2102	2*AF
				UFLK2100	GK
			2½”	UFLK2102	2*AF
				UFLK2100	GK
			3”	UFLK2102	2*AF
				UFLK2100	GK
			4”	UFLK2108	2*GK
	3-way	No	2”	UFLK5100	GM
			2½”	UFLK5102	2*GM
			3”	UFLK5102	2*GM

Valve Body Model	Valve Configuration	Fail-Safe	Size	Belimo Linkage	Belimo Actuator Series
VF.. (H) Series Butterfly Valves	3-way	No	4”	UFLKP109	PR
			5”	UFLK5136	SY4
			6”	UFLK5136	SY4
			8”	UFLK5138	SY5
			12”	UFLK5142	SY7
			14”	UFLK5144	SY8
			16”	UFLK5146	SY9
			18”	UFLK5148	SY11
			20”	UFLK5150	SY12
		Yes	2”	UFLK5102	2*AF
				UFLK5100	GK
			2½”	UFLK5102	2*GK
			3”	UFLK5102	2*GK
KEYSTONE					
360/362 Series Butterfly Valves, K-LOK	2-way	No	3”	UFLK2408	2*GM
			4”	UFLK2414	2*GM
				UFLKP013	PR
			5”	UFLKP013	PR
			10”	UFLK2452	SY4
			14”	UFLK2456	SY6
			16”	UFLK2458	SY6
			18”	UFLK2460	SY7
			20”	UFLK2462	SY9
			24”	UFLK2464	SY9
		Yes	2½”	UFLK2402	2*AF
				UFLK2400	GK
			3”	UFLK2408	2*GK
			4”	UFLK2414	2*GK
	3-way	No	2½”	UFLK5400	GM
			4”	UFLK5414	2*GM
			10”	UFLK5450	SY4
			14”	UFLK5454	SY7
			16”	UFLK5456	SY8
			18”	UFLK5458	SY9
			20”	UFLK5460	SY11
			24”	UFLK5462	SY12
		Yes	2½”	UFLK5402	2*AF
				UFLK5400	GK
			3”	UFLK5408	2*GK
			4”	UFLK5414	2*GK
370/372 Series Butterfly Valves, K-LOK	2-way	No	4”	UFLK2530	SY4
			5”	UFLK2530	SY4
			12”	UFLK2538	SY9
			14”	UFLK2540	SY9
	3-way	No	4”	UFLK5530	SY4
			5”	UFLK5530	SY4
			8”	UFLK5534	SY8
			14”	UFLK5540	SY12
AR1/AR2 Series Butterfly Valves	2-way	No	2”	UFLK2300	GM
			2½”	UFLK2300	GM
			3”	UFLK2300	GM
			4”	UFLK2308	2*GM
				UFLKP009	PR
			5”	UFLKP013	PR
			6”	UFLK2356	SY4
			8”	UFLK2342	SY4
			10”	UFLK2344	SY5
			12”	UFLK2346	SY7
			20”	UFLK2352	SY11
			24”	UFLK2354	SY12

Keystone

AR1/AR2, Figure 222/221 Series Butterfly Valves

Linkage/Actuator Selection Guide

Valve Body Model	Valve Configuration	Size	Fail-Safe	Belimo Linkage	Belimo Actuator Series
AR1/AR2 Series Butterfly Valves	2-way	Yes	2”	UFLK2300	GK
			2½”	UFLK2302	2*AF
				UFLK2300	GK
			3”	UFLK2302	2*AF
				UFLK2300	GK
			4”	UFLK2308	2*GK
	3-way	No	2”	UFLK5300	GM
			2½”	UFLK5300	GM
			4”	UFLKP109	PR
			5”	UFLK5338	SY4
			6”	UFLK5338	SY4
			8”	UFLK5340	SY5
			12”	UFLK5344	SY8
			16”	UFLK5348	SY10
			18”	UFLK5350	SY12
		Yes	2”	UFLK5302	2*AF
				UFLK5300	GK
			2½”	UFLK5302	2*AF
				UFLK5300	GK
			3”	UFLK5302	2*GK
Figure 222/221 Series Butterfly Valves	2-way	No	2”	UFLK2200	GM
				UFLKP003	PR
			2½”	UFLK2200	GM
				UFLKP003	PR
			3”	UFLK2200	GM
				UFLKP003	PR
			4”	UFLK2208	2*GM
				UFLKP009	PR
			5”	UFLKP013	PR
			6”	UFLK2232	SY4
			8”	UFLK2234	SY4
			10”	UFLK2236	SY5
			12”	UFLK2238	SY7
		Yes	2”	UFLK2202	2*AF
				UFLK2200	GK
			2½”	UFLK2202	2*AF
				UFLK2200	GK
			3”	UFLK2202	2*AF
				UFLK2200	GK
			4”	UFLK2208	2*GK
	3-way	No	2”	UFLK5200	GM
				UFLKP103	PR
			2½”	UFLK5200	GM
				UFLKP103	PR
			3”	UFLK5202	2*GM
				UFLKP103	PR
			4”	UFLKP109	PR
			5”	UFLK5228	SY4
			6”	UFLK5228	SY4
			8”	UFLK5230	SY5
			10”	UFLK5232	SY7
			12”	UFLK5234	SY8
		Yes	2”	UFLK5202	2*AF
				UFLK5200	GK
			2½”	UFLK5202	2*AF
				UFLK5200	GK
			3”	UFLK5202	2*GK

Valve Body Model	Valve Configuration	Fail-Safe	Size	Belimo Linkage	Belimo Actuator Series
CL Series Butterfly Valves	2-way	No	2”	UFLK2600	AM
			2½”	UFLK2600	AM
			3”	UFLK2600	GM
			4”	UFLK2608	2*GM
				UFLKP005	PR
			5”	UFLK2608	2*GM
				UFLKP005	PR
			6”	UFLKP010	PR
			8”	UFLK2634	SY4
			10”	UFLK2636	SY4
			12”	UFLK2636	SY5
		Yes	2”	UFLK2600	AF
			2½”	UFLK2600	AF
			3”	UFLK2600	GK
			4”	UFLK2608	2*GK
			5”	UFLK2608	2*GK
	3-way	No	2”	UFLK5600	AM
			2½”	UFLK5600	GM
			3”	UFLK5600	GM
			4”	UFLK5608	2*GM
			6”	UFLK5628	SY4
			8”	UFLK5630	SY4
			10”	UFLK5632	SY6
		Yes	2½”	UFLK5602	2*AF
				UFLK5600	GK
			3”	UFLK5602	2*AF
				UFLK5600	GK
ML Series Butterfly Valves	2-way	No	2”	UFLK2700	AM
			2½”	UFLK2700	AM
			3”	UFLK2700	GM
			4”	UFLK2708	2*GM
				UFLKP005	PR
			5”	UFLK2708	2*GM
				UFLKP005	PR
			6”	UFLKP010	PR
			8”	UFLK2740	SY4
			10”	UFLK2742	SY4
			12”	UFLK2742	SY5
			14”	UFLK2744	SY7
			16”	UFLK2744	SY7
			18”	UFLK2746	SY8
			24”	UFLK2750	SY10
		Yes	2”	UFLK2700	AF
			2½”	UFLK2700	AF
			3”	UFLK2700	GK
			4”	UFLK2708	2*GK
			5”	UFLK2708	2*GK
	3-way	No	2”	UFLK5700	AM
			3”	UFLK5700	GM
			4”	UFLK5708	2*GM
			8”	UFLK5740	SY4
			10”	UFLK5742	SY6
			12”	UFLK5744	SY7
			14”	UFLK5746	SY8
			16”	UFLK5748	SY9
			20”	UFLK5750	SY11
ML Series Butterfly Valves	2-way	Yes	2”	UFLK5702	2*AF
			2½”	UFLK5702	2*AF
			3”	UFLK5702	2*AF
				UFLK5700	GK
			4”	UFLK5708	2*GK

Valve Body Model	Valve Configuration	Size	Fail-Safe	Belimo Linkage	Belimo Actuator Series
LD1/WD1 Series Butterfly Valves	2-way	No	14”	UFLK2960	SY7
			16”	UFLK2968	SY8
			18”	UFLK2962	SY8
			20”	UFLK2964	SY9
			24”	UFLK2966	SY11
	3-way	No	14”	UFLK5956	SY8
			16”	UFLK5958	SY9
			18”	UFLK5960	SY10
			20”	UFLK5962	SY12
LD2/WD2, LD3 Series Butterfly Valves	2-way	No	2”	UFLK2900	GM
			2½”	UFLK2908	GM
				UFLKP002	PR
			3”	UFLK2910	2*GM
				UFLKP002	PR
			4”	UFLK2916	2*GM
				UFLKP006	PR
			5”	UFLKP012	PR
			6”	UFLKP012	PR
			8”	UFLK2954	SY4
			10”	UFLK2956	SY4
			12”	UFLK2958	SY6
		Yes	2”	UFLK2902	2*AF
				UFLK2900	GK
			2½”	UFLK2910	2*AF
				UFLK2908	GK
			3”	UFLK2910	2*GK
			4”	UFLK2916	2*GK
			5”	UFLKP012	PKR
			6”	UFLKP012	PKR
	3-way	No	2”	UFLK5900	GM
			2½”	UFLK5910	2*GM
			3”	UFLK5910	2*GM
			4”	UFLKP106	PR
			5”	UFLK5948	SY4
			6”	UFLK5948	SY4
			8”	UFLK5950	SY6
			12”	UFLK5954	SY8
		Yes	2”	UFLK5902	2*AF
				UFLK5900	GK
			2½”	UFLK5910	2*GK
			3”	UFLK5910	2*GK
PDC					
27 Series Butterfly Valves (Pinned Shaft Type)	2-way	No	2”	UFLK3100	GM
			2½”	UFLK3102	2*GM
			3”	UFLK3102	2*GM
			4”	UFLK3108	2*GM
			6”	UFLKP010	PR
			8”	UFLK3132	SY4
		Yes	2”	UFLK3102	2*AF
				UFLK3100	GK
			2½”	UFLK3102	2*GK
			3”	UFLK3102	2*GK
			4”	UFLK3108	2*GK
	3-way	No	2”	UFLK6100	GM
			2½”	UFLK6102	2*GM
			3”	UFLK6102	2*GM
			5”	UFLK6126	SY4
27 Series Butterfly Valves (Pinned Shaft Type)	3-way	No	6”	UFLK6128	SY4
			8”	UFLK6130	SY4
			10”	UFLK6132	SY6
			12”	UFLK6134	SY7
		Yes	2”	UFLK6102	2*AF
				UFLK6100	GK
			2½”	UFLK6102	2*GK
			3”	UFLK6102	2*GK

Valve Body Model	Valve Configuration	Fail-Safe	Size	Belimo Linkage	Belimo Actuator Series
Masterseal (New Style) Series Butterfly Valves	2-way	No	2”	UFLK8172	AM
				UFLKP001	PR
			2½”	UFLK8172	GM
				UFLKP001	PR
			3”	UFLK8172	GM
				UFLKP001	PR
			4”	UFLK8176	2*GM
				UFLKP008	PR
			5”	UFLKP013	PR
			6”	UFLKP013	PR
			8”	UFLK8188	SY4
			10”	UFLK8190	SY5
			12”	UFLK8190	SY6
		Yes	2”	UFLK8174	2*AF
			2½”	UFLK8174	2*AF
				UFLK8172	GK
			3”	UFLK8172	GK
			4”	UFLK8176	2*GK
			4”	UFLKP008	PKR
			5”	UFLKP013	PKR
			6”	UFLKP013	PKR
	3-way	No	2”	UFLK7400	GM
				UFLKP101	PR
			2½”	UFLK7402	2*GM
				UFLKP101	PR
			3”	UFLKP101	PR
			4”	UFLKP108	PR
			5”	UFLKP113	PR
			6”	UFLK7412	SY4
			8”	UFLK7414	SY4
			10”	UFLK7416	SY6
			12”	UFLK7418	SY7
		Yes	2”	UFLK7402	2*AF
				UFLK7400	GK
			2½”	UFLK7402	2*GK
			2½”	UFLKP101	PKR
			3”	UFLKP101	PKR
			4”	UFLKP108	PKR
			5”	UFLKP113	PKR
Vic300 (Old Style) Series Butterfly Valves	2-way	No	2”	UFLK3300	AM
			2½”	UFLK3308	AM
			3”	UFLK3308	GM
			4”	UFLK3316	2*GM
			8”	UFLK3352	SY4
			10”	UFLK3354	SY4
			12”	UFLK3356	SY4
		Yes	2”	UFLK3300	AF
			2½”	UFLK3308	AF
			3”	UFLK3310	2*AF
				UFLK3308	GK
			4”	UFLK3316	2*GK
Vic300 (Old Style) Series Butterfly Valves	3-way	No	2”	UFLK6300	GM
				UFLK6336	SY1
			2½”	UFLK6308	GM
			6”	UFLK6348	SY4
			8”	UFLK6350	SY4
			10”	UFLK6352	SY5
			12”	UFLK6354	SY6
		Yes	2”	UFLK6300	AF
				UFLK6300	GK
			2½”	UFLK6310	2*AF
				UFLK6308	GK

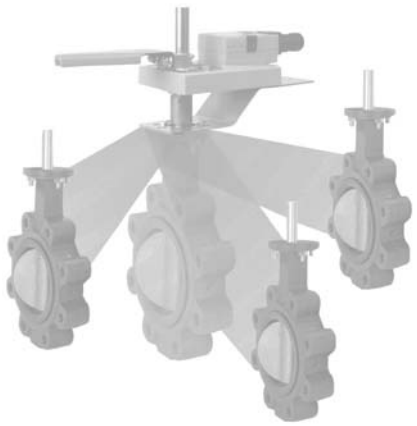
Specialty Solutions for Valve Manufacturers

Belimo offers specialty linkage solutions for the manufacturers in the chart below.
Please contact technical support for a quotation.

Valve Company	Butterfly Valve Series	Valve Configuration
Apollo	141/143 Series	2-way
		3-way
Belimo	HS, HSU, HD, HDU Series	2-way
		3-way
Challenger	CH100 Series	2-way
		3-way
Chemtrol	PVC Model C Series	2-way
		3-way
Dezurik	BRS Series	2-way
		3-way
Flowseal	1 L/W Series	2-way
		3-way
	3 L/W Series	2-way
		3-way
FNW	Figure 1000/2000 Series	2-way
		3-way
Gruvlok	Figure 7700 (Double D Shaft 2003 and Newer) Series	2-way
		3-way
	Figure 7700 (Sheared Pin Shaft Pre 2003) Series	2-way
		3-way
Hammond	61/62 Series	2-way
		3-way
Jamesbury	815 L/W Series	2-way
		3-way
	830 L/W Series	2-way
		3-way
Jenkins	22XXEXJ Series	2-way
		3-way
Metraflex	200 WOG Series	2-way
		3-way
Mueller	65/66 Series	2-way
		3-way
PDC	27 Series (Double D Shaft)	2-way
		3-way
Quartermaster	42/44 Series	2-way
		3-way
Watts	DBF Series (pre 2009)	2-way
		3-way

Considerations:

- Every retrofit solution is available in 2-way and 3-way configurations.
- Kits do not require completed retrofit form; only the make, model, and size of the competitor valve are required.
- Pricing and delivery vary with complexity.



Instructions for Completing this Form

Required tools needed a caliper, thread gauge, retrofit form, flashlight, and ladder (if applicable).

Please keep in mind that all dimensions should be taken with ALL original actuation and hardware components removed from the valve body.

Examples of dimensions A & B **(Dim A and Dim B)** relate to the TOP mounting holes on the butterfly valve body. These holes are usually arranged on the body in either an "X" pattern (**MOUNT STYLE 1**), or a cross pattern (**MOUNT STYLE 2**). This information is entered on the UFSP Series Butterfly Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim C**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

Next is the valve stem data. The five styles of valve stems cover 98% of the butterfly valves ever produced. Examine the valve being retrofitted to establish which shaft style matches the diagrams above. Use caution when recording these dimensions. Careless use of calipers will result in a sloppy and possibly dysfunctional linkage system. **Dim D** refers to the valve stem diameter and should be measured at several points up and down as well as around the stem itself. **Dim E** refers to the length of the drive surface available, whether it be a key, flatted surface, or the distance a drive hole is from the top of the stem. There are two types of keys (Keyway-Shaft Style 4 and Woodruff Key-Shaft Style 5). Please select the key size as noted in the column "For Shaft Style 4 & 5". **Dim F** refers to the width of the drive surface. This is the most critical dimension for correct linkage operation. Please measure accordingly.

In addition, we require information about the environment and process in which this linkage system will be utilized.

The form must be completed in its entirety to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage system for the facility. Measurements rounded to the nearest ⅛ or 1/16 inch will not perform as well (sometimes not at all) as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

DISCLAIMER

We will do our best to provide a linkage system designed around your specifications and measurements. However, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

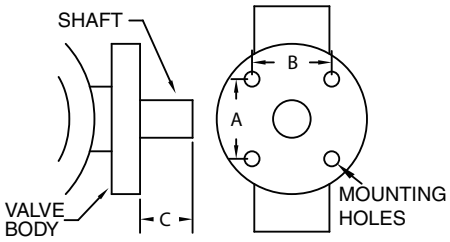
Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

Custom Butterfly Valve Retrofit Solution Form

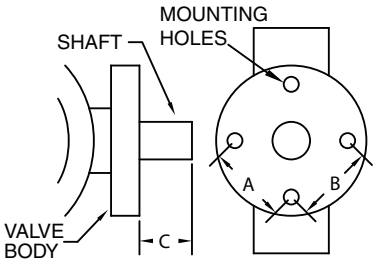
UFSP Series

BELIMO

MOUNT STYLE 1



MOUNT STYLE 2



MOUNT STYLE DIMENSIONS

MOUNT STYLE

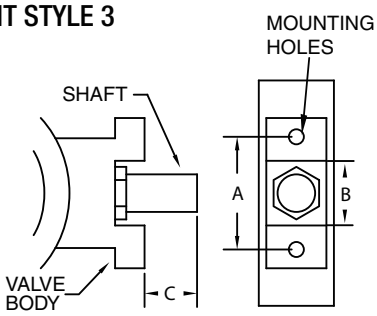
DIM A:

DIM B:

DIM C:

DIM. A & B MEASURED FROM CENTER OF HOLE

MOUNT STYLE 3



MOUNT STYLE 4

SKETCH YOUR MOUNT STYLE
USING MOUNT STYLE EXAMPLES.

MOUNTING HOLES:

DRILLED

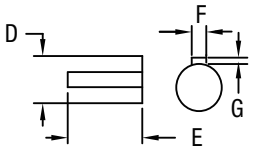
DIA Ø: Ex: 0.437"

THREAD

TAPPED

SPEC. Ex: 1/2-20

SHAFT STYLE 4



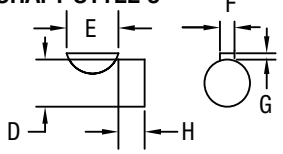
KEYWAY

KEY SIZE

- .125" ☐
- .1875" ☐
- .250" ☐
- .3125" ☐
- .375" ☐
- .4375" ☐
- .500" ☐

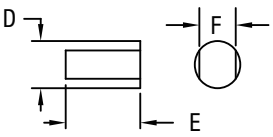
CHECK ONE

SHAFT STYLE 5



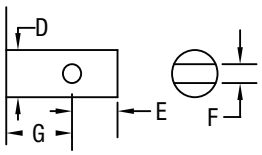
WOODRUFF KEY

SHAFT STYLE 6



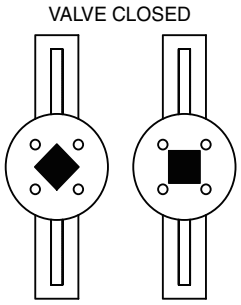
DOUBLE D

SHAFT STYLE 8



PINNED

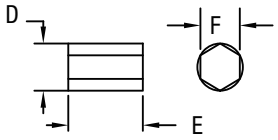
SHAFT STYLE 9



☐ ☐

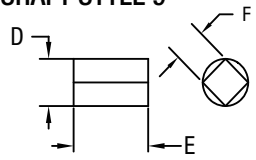
CHECK ONE

SHAFT STYLE 7



HEX

SHAFT STYLE 9



SQUARE

SHAFT STYLE ☐ DIM D: DIM E: DIM F: DIM G: DIM H:

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC ☐ PWM

FAIL SAFE: ☐ YES ☐ NO Range:_____ Range:_____

FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

VOLTAGE_____

COMPANY: _____ VALVE MANUFACTURE: _____ 2 WAY/3 WAY: _____

JOB NAME: _____ VALVE SERIES: _____ VALVE SIZE: _____

PO#: _____ VALVE MODEL: _____ MEDIA TEMP: _____

PHONE: _____ VALVE TAG/LOCATION: _____ MEDIA TYPE: _____

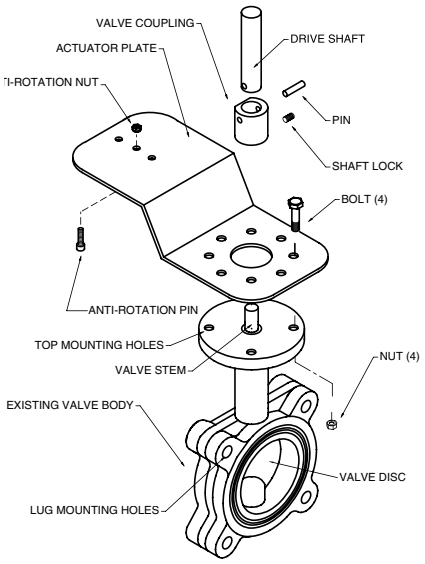
EMAIL: _____ QUANTITY: _____ SYSTEM PRESSURE: _____

NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

CUSTOM KITS ARE DESIGNED TO YOUR UNIQUE SPECIFICATIONS AND ARE **NOT RETURNABLE.**

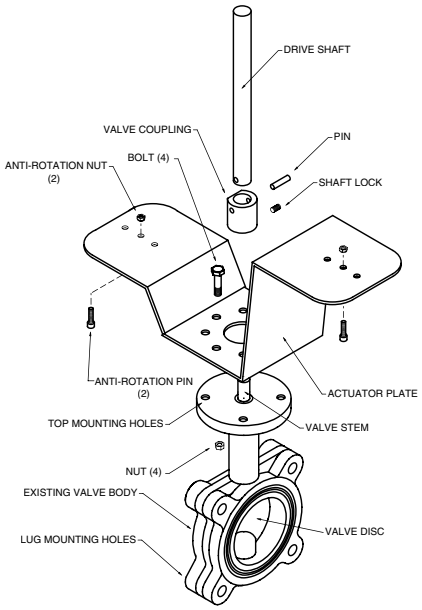
COMPANY CONTACT/DIMENSIONS PROVIDED BY: _____ DATE: _____

2-way Single Actuator
Generic – Retrofit Form Required



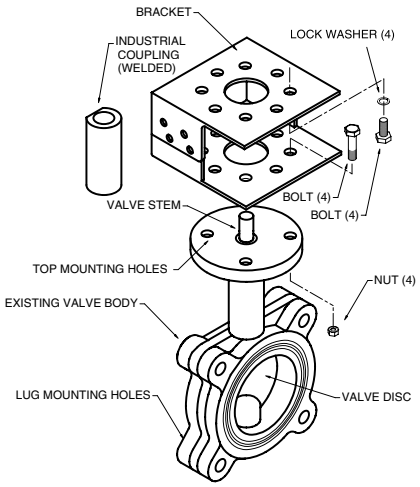
UFSP0000

2-way Dual Actuator
Generic – Retrofit Form Required



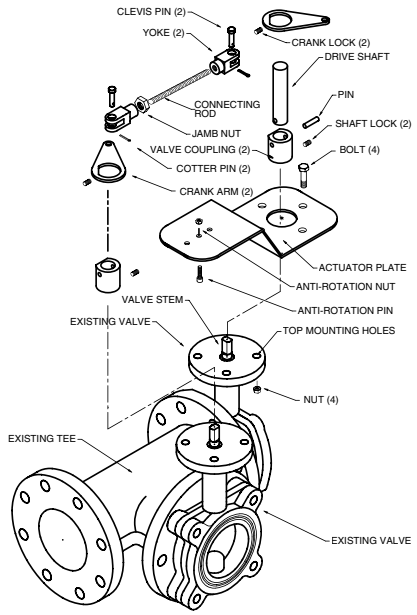
UFSP0008

2-way SY / PR / PKR Actuator
Generic – Retrofit Form Required



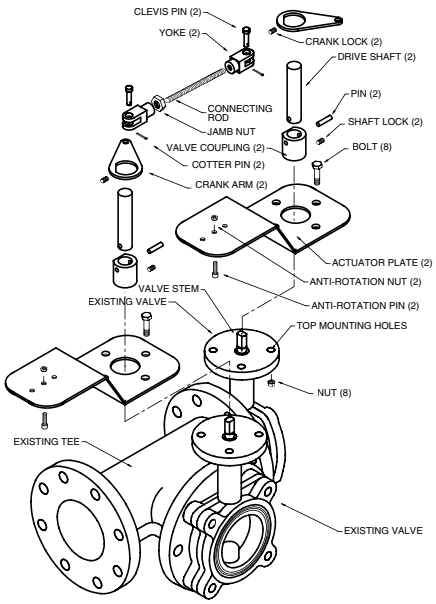
UFSP0020* PR, PKR, SY4 - SY8
UFSP0022* SY9 - SY12

3-way Single Actuator
Generic – Retrofit Form Required



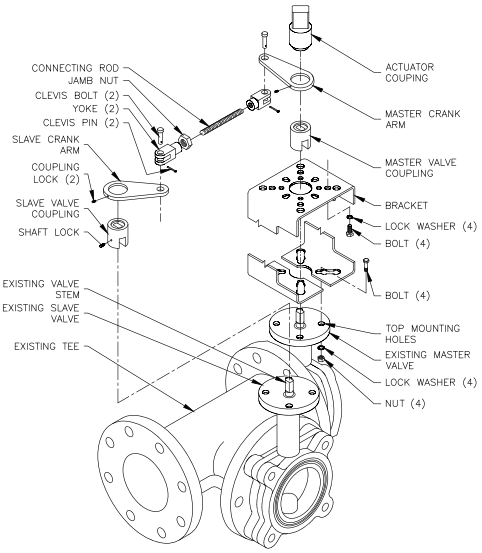
UFSP0002

3-way Dual Actuator
Generic – Retrofit Form Required



UFSP0010

3-way SY / PR / PKR Actuator
Generic – Retrofit Form Required



UFSP0024* PR, PKR, SY4 - SY8
UFSP0026* SY9 - SY12

NOTE: 3-way bracket configuration shown is only one of many possible arrangements. Custom kits are designed to your unique specification and are not returnable.

*Reference page 100-101 Keystone AR1/AR2 for approximate actuator sizing.

5 YEAR WARRANTY

Valve Accessories

Butterfly Valves

PROGRAMMING TOOLS		AM	GM	AR	GR	DR	GK	DK	SY
	**Belimo Assistant (NFC) App** Allows fast programming, commissioning, and troubleshooting even when the actuator is not powered. Available through Google Play and Apple App Store	*Available on NFC Labeled Actuators Only*							
	**MFT-P** Belimo MFT configuration software (V3.X) Includes: PC-Tool software (interface cables [ZTH US] not included)	*Available for all MFT Actuators Only*							
	**ZTH US** Handheld interface module that allows field programming. Includes ZK1-GEN, ZK2-GEN, and ZK6-GEN cables	*Available for all MFT Actuators Only*							
ZTH REPLACEMENT CABLES									
	**ZK1-GEN** Cable for use with ZTH US to connect to new generation non fail-safe and electronic fail-safe actuators via diagnostic/ programming socket	•	•	•	•	•	•	•	
	**ZK2-GEN** Cable for use with ZTH US to connect to actuators not equipped with diagnostic/programming socket	*Available for all MFT Actuators Only*							
	**ZK6-GEN** Cable for use with ZTH US to connect to SY actuator via RJII port								•

BATTERY BACKUP		AR	GR/DR	PR	SY
	**NSV24 US** Battery backup module	•	•	•	
	**NSV-BAT** 12VDC 1.2 AH battery (2 required)	•	•	•	
	EXT-NSV-B03-120* Battery backup system for SY4 - SY6 120 VAC, on/off actuators				•
	EXT-NSV-B04-120* Battery backup system for SY4 - SY6 120 VAC, MFT actuators				•
	EXT-NSV-B05-120* Battery backup system for SY7 - SY12 120 VAC, on/off actuators				•
	EXT-NSV-B06-120* Battery backup system for SY7 - SY12 120 VAC, MFT actuators				•
	**EXT-NSV-B13-24*** Battery backup system for SY4 - SY5 24 VAC, on/off actuators				•
	EXT-NSV-B14-24* Battery backup system for SY4 - SY5 24 VAC, MFT actuators				•
	EXT-NSV-B23-230* Battery backup system for SY4 - SY6 230 VAC, on/off actuators				•
	EXT-NSV-B24-230* Battery backup system for SY4 - SY6 230 VAC, MFT actuators				•
	EXT-NSV-B25-230* Battery backup system for SY7 - SY12 230 VAC, on/off actuators				•
	EXT-NSV-B26-230* Battery backup system for SY7 - SY12 230 VAC, MFT actuators				•

NOTE: Each NSV-24 US requires 2 NSV-BAT.
*All EXT part numbers are not returnable.

WEATHER SHIELDS		GM	2* GM	DR/GR/ GKR	AF	2* AF	GK	2* GK
	**ZS-BFV-20**** For GM, GK actuators on F6, F7, HD, HDU, SHP, and VIC series	•					•	
	ZS-BFV-30** For AF actuators on F6, F7, HD, HDU SHP, and VIC series				•			
	ZS-BFV-60** For dual GM, GK actuators on butterfly valves F6, HD, HDU (4" - 6"), SHP, and VIC series		•					•
	ZS-BFV-70** For dual AF series on butterfly valves F6, HD, HDU (2½" - 3"), SHP and VIC series					•		
	ZS-BFV-80** For dual AF series on butterfly valves F6, HD, HDU (4" - 5"), SHP and VIC series					•		
	ZS-BFV-90** FBGL weather shield for F7 series (dual act, <4") No holes unless factory mounted		•			•		•
	ZS-BFV-100** Dual GM/GK series for F7, HD, HDU, SHP (4-6") **Two required**		•					•
	ZS-BFV-110 DR, GR, GKR series for F6, HD, HDU (4"-6")			•				

**Cannot be used with direct mount actuators.

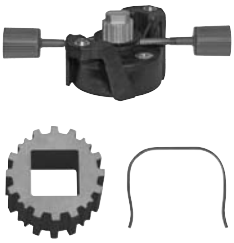
AUXILIARY SWITCHES & POTENTIOMETERS		LR/LM	NR/NM	AR/AM	GR/GM	AK	GK/GKR	DR	SY
	S1A Auxiliary switch 1x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•	
	**S2A** Auxiliary switch 2x SPDT, 3A (0.5A inductive) @ 250 VAC	•	•	•	•	•	•	•	
	P140A GR Feedback potentiometer 140 Ω	•	•	•	•	•	•	•	
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•	
	P500A GR Feedback potentiometer 500 Ω	•	•	•	•	•	•	•	
	P1000A GR Feedback potentiometer 1000 Ω	•	•	•	•	•	•	•	
	**P2800A GR** Feedback potentiometer 2800 Ω	•	•	•	•	•	•	•	
	P5000A GR Feedback potentiometer 5000 Ω	•	•	•	•	•	•	•	
	P10000A GR Feedback potentiometer 10000 Ω	•	•	•	•	•	•	•	
	**SY-1000-FB01** Feedback potentiometer 1000 Ω, 2 position, factory installed option only								•
	SY-1000-FB02 Feedback potentiometer 1000 Ω, modulating (models SYx…-MFT), factory installed option only								•

Valve Accessories

Butterfly Valves

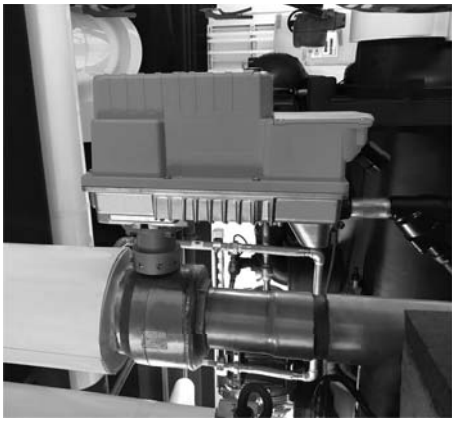
ELECTRIC DISCONNECT		SY
	**HOA-120V** Local electric disconnect for SY4-SY12 110/230V - 2 position	•
		•
	HOA-120VMFT Local electric disconnect for SY4-SY12 110/230V - modulating	•
		•
	HOA-24V Local electric disconnect for SY4-SY12 24V - 2 position	•
		•
	HOA-24VMFT Local electric disconnect for SY4-SY12 24V - modulating	•
		•

HAND CRANK		PR	PKR
	**ZG-HND PR** Replacement hand crank for PR and PKR actuators	•	•

		VALVE TYPE
PR/PKR RETROFIT LINKAGE		BUTTERFLY
	**IND-PR01** Valve linkage for 4" - 6" HDU/HD series 2-way with indicator	•
	IND-PR02 Valve linkage for 4" - 6" HDU/HD series 2-way without indicator	•
	IND-PR03 Valve linkage for 8" - 12" L series 2-way with indicator	•
	IND-PR04 Valve linkage for 8" - 12" L series 2-way without indicator	•

Ball Valve Retrofit Solutions

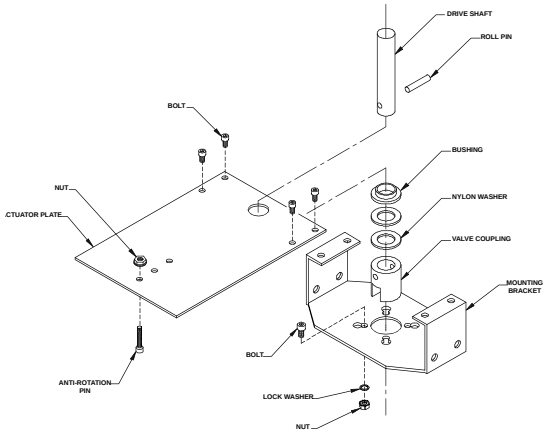
Belimo ball valve retrofit solutions are designed to easily attach to the valve mounting pad of competitor valves utilizing Belimo actuators. Ball valves can conveniently be restored to service without removing the valve, saving down time and costs.



5 YEAR WARRANTY

UBSP0004 Custom Retrofit Linkage for Ball Valves

For use with Belimo Rotary Actuators



5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1¼" [32], 1½" [38], 2" [50]
Frame, plate, base	stainless steel
Shaft diameter	½" to ¾" round
Shaft	stainless steel
Coupling	stainless steel
Bearing	bronze oil-lite
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Weight	9 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

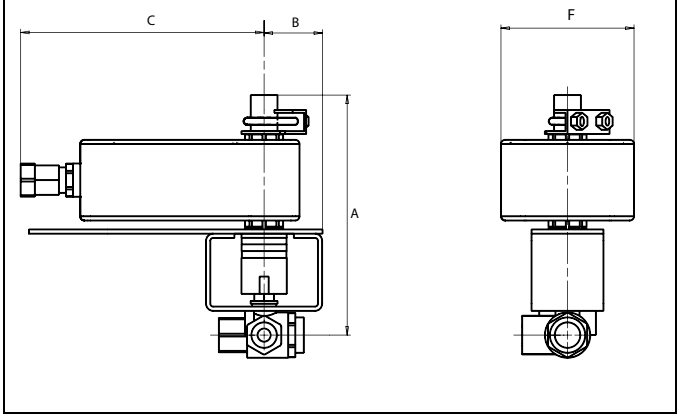
Default/Configuration

The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Suitable Actuators

Linkage	Spring Return	Electronic Fail-Safe	Non-Spring Return
UBSP0004	LF, NF, AF	GK	LM, NM, AM, GM

Dimensions (Inches [mm])



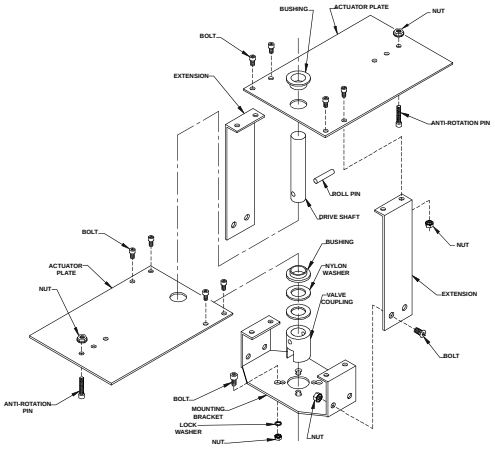
A	B	C	F
8.00 [203.2]	2.00 [51]	8.00 [203]	6.00 [152.4]

Application Notes

Before ordering, a completed retrofit form is required.

UBSP0006 Custom Retrofit Linkage for Ball Valves

For use with Belimo Rotary Actuators



5 YEAR WARRANTY

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

Default/Configuration

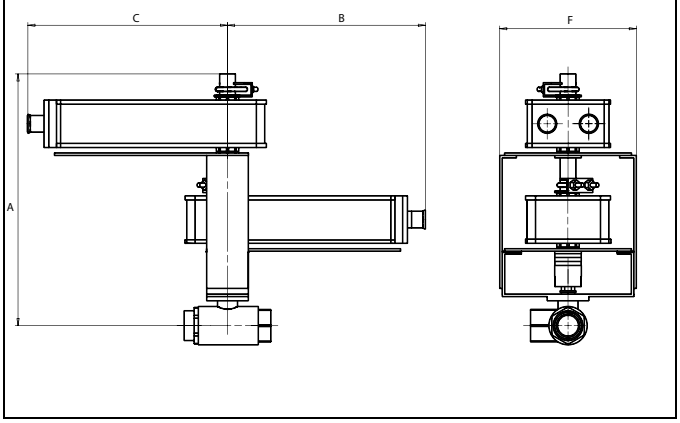
The actuator is sold separately from the linkage, allowing users to select an actuator with the desired control signal. The linkage utilizes standard airside or SY actuators which can be purchased at any time and mounted in the field.

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1¼" [32], 1½" [38], 2" [50]
Frame, plate, base	stainless steel
Shaft diameter	½" to ¾" round
Shaft	stainless steel
Coupling	stainless steel
Bearing	bronze oil-lite
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Weight	18 lbs

Suitable Actuators

Linkage	Spring Return	Electronic Fail-Safe	Non-Spring Return
UBSP0006	2*AF	2*GK	2*GM

Dimensions (Inches [mm])



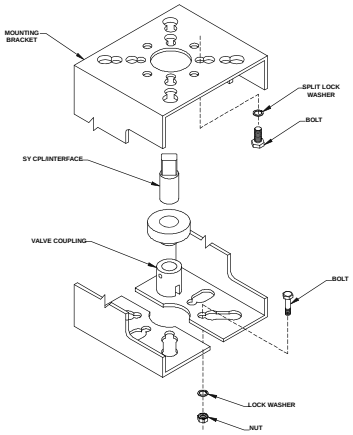
A	B	C	F
15.60 [396.24]	8.00 [203]	8.00 [203]	6.00 [152.4]

Application Notes

Before ordering, a completed retrofit form is required.

UBSP0008 Custom Retrofit Linkage for Ball Valves

For use with Belimo SY, PR, and PKR Actuators



5 YEAR WARRANTY

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

Default/Configuration

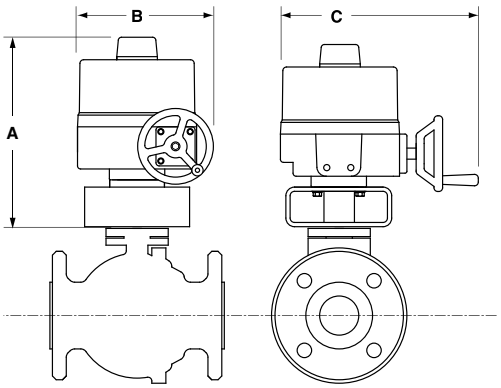
Actuators are sold separately and mounted in the field.

Suitable Actuators

Linkage	Non-Spring Return	Electronic Fail-Safe
UBSP0008	SY1, SY4, SY5, SY6, PR	PKR

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	½" [13], ¾" [19], 1" [25], 1-¼" [32], 1-½" [38], 2" [50], 2-½" [63.5], 3" [76.2]
Frame, plate, base	stainless steel
Shaft	steel
Coupling	steel
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Housing	NEMA 4X, IP66
Weight	12 lbs

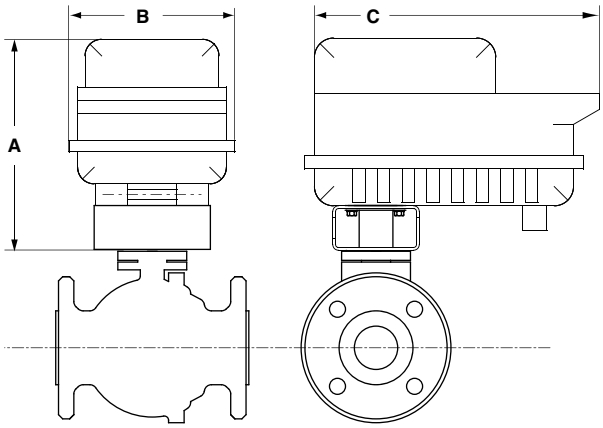
Dimensions (Inches [mm])



A	B	C
16.63 [422]*	12.00 [305]	15.00 [381]

*Based on SY6

Dimensions (Inches [mm])



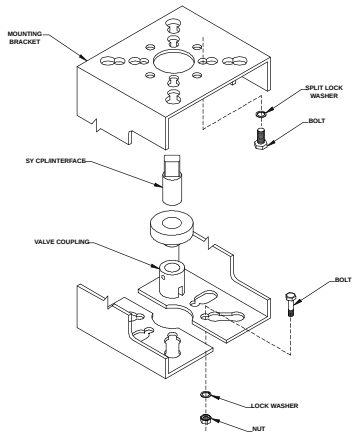
A	B	C
14.63 [372]	10.00 [254]	13.00 [330]

Application Notes

Before ordering, a completed retrofit form is required.

UBSP0012 Custom Retrofit Linkage for Ball Valves

For use with Belimo SY Actuators



5 YEAR WARRANTY

Technical Data	
Service	chilled or hot water and steam
Applicable valve size	3” [76.2], 4” [101.6], 5” [127], 6” [152.4]
Frame, plate, base	stainless steel
Shaft	steel
Coupling	steel
Mounting position	360°
Media temp. range (water)	-22°F to +298°F [-30°C to +148°C]
Media temp. range (steam)	20°F to 298°F [-7°C to +148°C]
Housing	NEMA 4X, IP66
Weight	20 lbs

Application

The UBSP custom retrofit kit is designed to easily attach to the valve mounting pad on select competitor valves utilizing Belimo actuators. This kit will help to restore service without removal of the valve, saving down time. The UBSP retrofit kit is available in various configurations for use with both 2-way and 3-way valves utilizing single or dual actuation.

Operation

The UBSP custom kit and mounted actuator(s) are capable of rotating 95° in both CW and CCW directions. This allows the ball to fully open or close. When directional needs vary, the actuators can be flipped or directional switch turned to a new rotation. Refer to Master Slave wiring for dual mounted actuators.

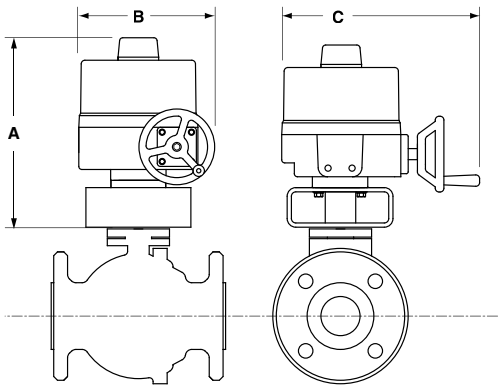
Default/Configuration

Actuators are sold separately and mounted in the field.

Suitable Actuators

Linkage	Non-Spring Return
UBSP0012	SY7, SY8, SY9, SY10, SY11, SY12

Dimensions (Inches [mm])



A	B	C
27 [685]*	14.00 [356]	21.00 [533]

*Based on SY12

Application Notes

Before ordering, a completed retrofit form is required.

Instructions for Completing this Form

Required tools needed a caliper, thread gauge, retrofit form, flashlight, and ladder (if applicable).

Ball valves without a mounting flange are typically not designed for installing actuation; therefore the valve design may not support modulation outside of manual usage. Belimo does not recommend retrofitting these types of ball valves.

All dimensions should be taken with ALL original actuation and hardware components removed from the valve body.

An example using **Mounting Style 3:** Dimensions A & B (**Dim A and Dim B**) relate to the TOP mounting holes on the ball valve body. These holes are usually arranged on the body in a "X" pattern (**MOUNT STYLE 3**). This information is entered on the UBSP Series Ball Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim D and E**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

MOUNT STYLE 3: Dimensions A & B (**Dim A and Dim B**) relate to the TOP mounting holes on the ball valve body. These holes are usually arranged on the body in a "X" pattern (**MOUNT STYLE 3**). This information is entered on the UBSP Series Ball Valve Retrofit Form in the **MOUNT STYLE** section. The length of the valve stem sticking out of the top of the valve body is recorded under **Dim D and E**. The TOP mounting holes are usually drilled through the top flange, but sometimes are threaded. Enter this information on the form next to the mount style information previously recorded.

STEM STYLE: Examine the valve being retrofitted to establish which stem style matches the diagrams. Use caution when recording these dimensions. **Dim H** refers to the valve stem diameter and should be measured at several points up and down as well as around the stem itself. **Dim E** refers to the length of the drive surface available, whether it is a key or flatted surface. **Dim F** refers to the width of the drive surface or the distance across the flats. This is the most critical dimension for correct linkage operation. Please measure accordingly. Lastly please specify the desired actuator orientation in reference to the valve body using the ports as reference, i.e. over the "A" port etc. We have also includes an ISO-5211 standard dimension chart for reference. If the valve is labeled please specify its "F" number so that we may confirm the dimensions per the ISO spec.

In addition, we require information about the environment and process in which this linkage system will be utilized, as well as the frequency of use the current actuator runs. This will help to ensure the longevity of the new linkage and actuator. Having the prior actuator spec and model will help.

The form must be completed in its entirety to guarantee the complete, perfect fit of your retrofit system. Keep in mind that retrofit kits are designed with close-tolerance components which afford the most efficient linkage systems. Measurements rounded to the nearest 1/8 or 1/16 inch will not perform as well (sometimes not at all) as a kit designed around careful measurements using proper equipment. Our designs are typically +.005" tolerance.

DISCLAIMER

We will do our best to provide a linkage system designed around your specifications and measurements. However, we cannot be held responsible for linkages which do not fit as a result of incorrect data given to Belimo. We will re-work components which do not fit properly for a nominal fee.

To reduce the possibility of incorrect linkage solutions, we respectfully request that you fill out the retrofit form completely and forward that information with your order. This will serve as a double check between your valve and the actuator/linkage package designed for your application.

Actuation, weather shields and linkages cannot be pre-assembled at the Belimo factory prior to your receipt. The linkages are designed to be attached onto the valve body first, then optional weather shields, and finally actuation products.

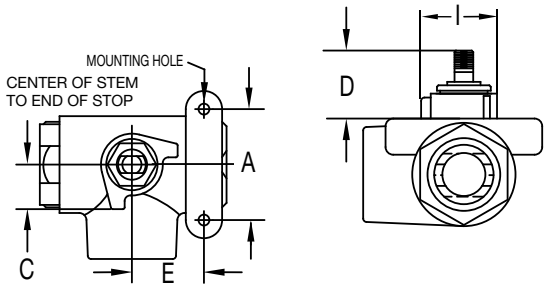
Close-off pressures are calculated using actuator torque, valve stroke, and valve area. Other factors may affect the rated close-off pressures, including flow rates, system maintenance schedules, chemicals used in the shot feeder process, vicinity to pumps, condition of valve stem seals, and assembly of linkage material in the field.

Valves that are being considered for retrofit of actuation should be analyzed for their life expectancy before the retrofit has taken place. Valves that leak through stem seals or casings will continue to leak with the new linkage system in place, maybe even more so. Rebuilding the packing on these valves may be more costly than replacing the valves themselves. In some instances, older valve stem heights will require field modifications to the valve in order to utilize the retrofit kit. Belimo takes no responsibility for the operation of these valves after they have been modified.

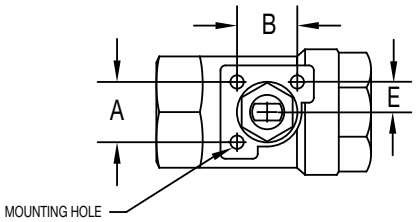
BELIMO

Custom Ball Valve Retrofit Solution Form

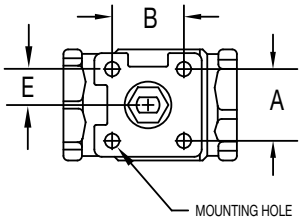
MOUNT STYLE 1



MOUNT STYLE 2



MOUNT STYLE 3



MOUNT STYLE 4

SKETCH YOUR MOUNT STYLE USING EXAMPLES ABOVE

MOUNT STYLE DIMENSIONS

MOUNT STYLE ☐

DIM A: _____

DIM B: _____

DIM C: _____

DIM D: _____

DIM E: _____

MOUNTING HOLES:

DRILLED

DIA Ø: _____

TAPPED

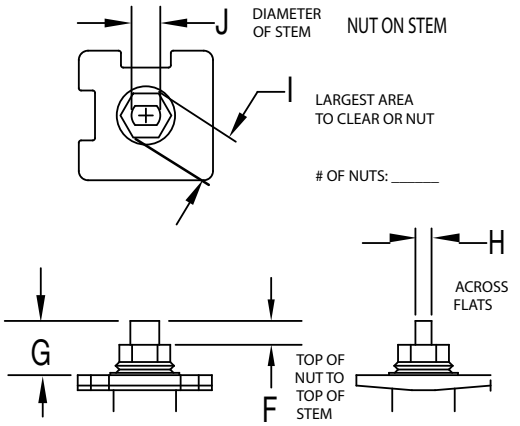
THREAD SPEC. _____

DIM. A & B MEASURED FROM CENTER OF HOLE

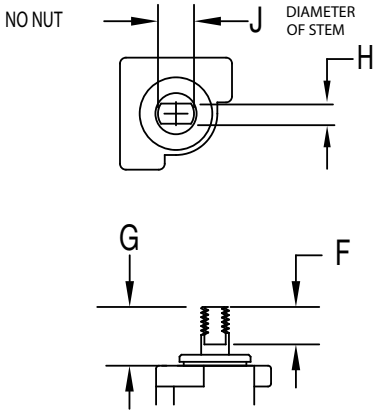
ISO STANDARD

ISO	BOLT SQUARE	BOLT SIZE Ø	CHECK ONE
F03	1.002	M5	
F04	1.169	M5	
F05	1.392	M6	
F07	1.949	M8	
F10	2.840	M10	
F12	3.480	M12	
F14	3.879	M16	
F16	4.593	M20	
F25	7.071	M16	

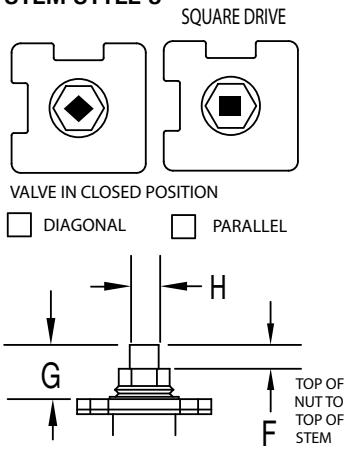
STEM STYLE 1



STEM STYLE 2



STEM STYLE 3



STEM STYLE ☐ DIM F: _____ DIM G: _____ DIM H: _____ DIM I: _____ DIM J: _____

ACTUATOR

EXISTING ACTUATOR MODEL: _____ CONTROL TYPE: ☐ ON/OFF ☐ FLOATING POINT ☐ VDC ☐ PWM

Range:_____ Range:_____

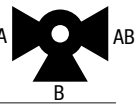
FAIL SAFE: ☐ YES ☐ NO

FAIL POSITION: ☐ NO ☐ NC ☐ INDOOR ☐ OUTDOOR

FREQUENCY OF OPERATION (*specify how often*): DAILY_____ WEEKLY_____ MONTHLY_____

VOLTAGE: _____

ACTUATOR ORIENTATION:



COMPANY: _____

JOB NAME: _____

PO#: _____

PHONE: _____

EMAIL: _____

VALVE MANUFACTURER: _____

VALVE SERIES: _____

VALVE MODEL: _____

VALVE TAG/LOCATION: _____

QUANTITY: _____

2 WAY/3 WAY: _____

VALVE SIZE: _____

MEDIA TEMP: _____

MEDIA TYPE: _____

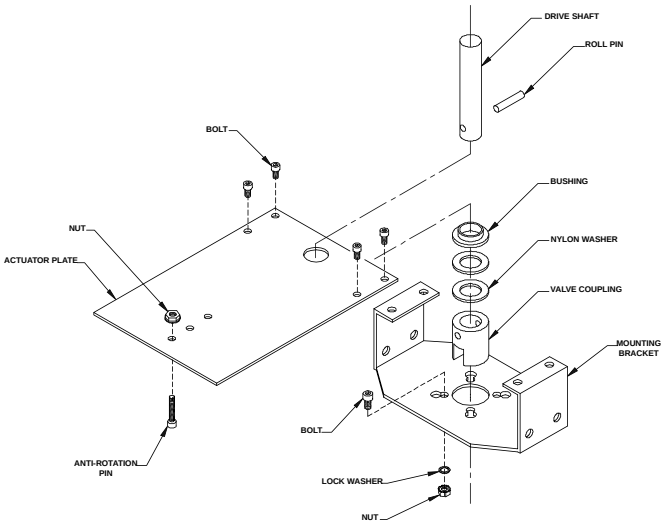
SYSTEM PRESSURE: _____

NOTE: THIS INFORMATION WILL BE UTILIZED IN THE FABRICATION OF A CUSTOM LINKAGE SYSTEM FOR YOUR VALVE REQUIREMENT; THEREFORE, IT IS ESSENTIAL THAT THE ABOVE DIMENSIONS BE FURNISHED WITH READINGS TAKEN TO THE NEAREST .001". ANY ERRONEOUS DIMENSIONS FURNISHED WHICH RESULT IN IMPROPER FIT OF THIS LINKAGE SYSTEM ARE NOT THE RESPONSIBILITY OF BELIMO AIRCONTROLS. ANY REWORK REQUIRED WILL RESULT IN AN EXTRA CHARGE.

CUSTOM KITS ARE DESIGNED TO YOUR UNIQUE SPECIFICATIONS AND ARE **NOT RETURNABLE.**

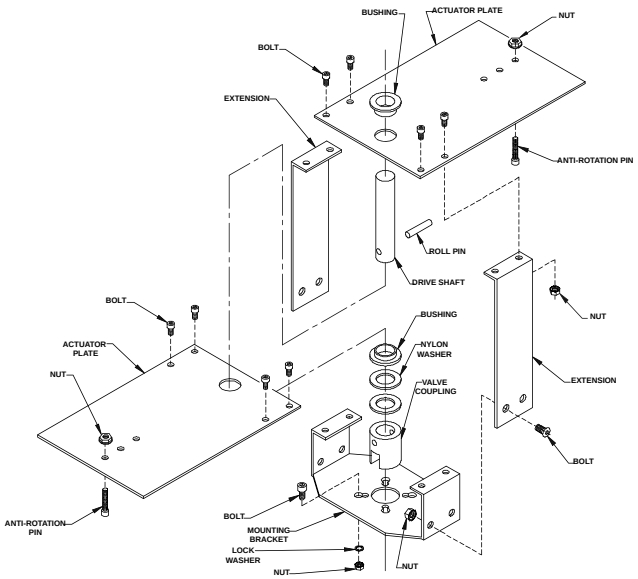
COMPANY CONTACT/DIMENSIONS PROVIDED BY: _____ DATE: _____

2-way/3-way Single Actuator
Generic – Retrofit Form Required



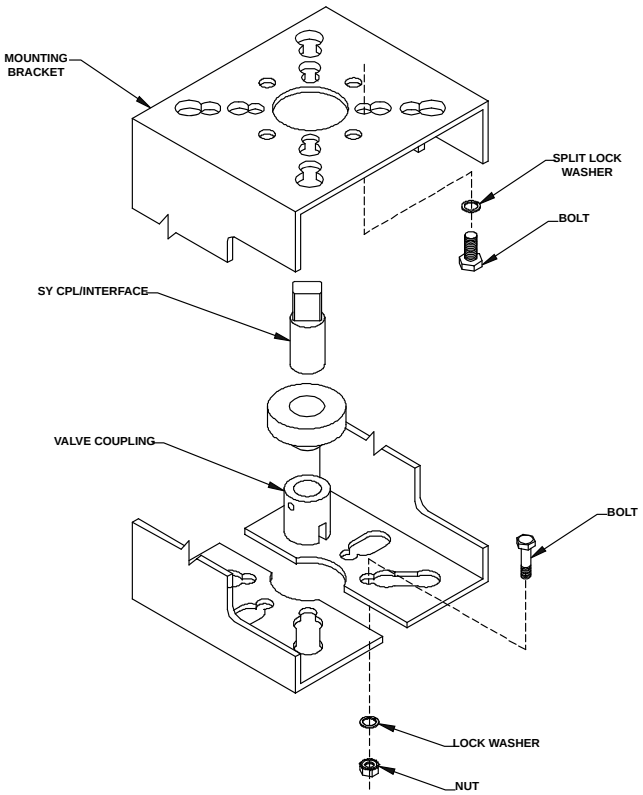
UBSP0004

2-way/3-way Dual Actuator
Generic – Retrofit Form Required



UBSP0006

Industrial Electronic 2-way/3-way
Generic – Retrofit Form Required



UBSP0008 **PR, PKR, SY4 - SY6**

UBSP0012 **SY7-SY9**

Custom kits are designed to your unique specification and are not returnable.

Belimo Americas Platinum Distributors

USA

ACR Supply Company Inc.
4040 S. Alston Avenue
Durham, NC 27713
Phone: 919-765-8081
With branches in NC

Aireco Supply
9120 Washington Boulevard
Savage, MD 20763-0414
Phone: 301-953-8800
With branches in MD, VA

Amcon Controls, Inc.
11906 Warfield Street
San Antonio,TX 78216
Phone: 210-349-6161
With branches in Houston, TX and Mandeville, LA

Relevant Solutions (formally Applied Automation)
3186 South Washington Street, #230
Salt Lake City, UT 84115
Phone: 801-486-6454
With branches in CA, CO, TX

Boston Aircontrols, Inc.
8 Blanchard Road
Burlington, MA 01803
Phone: 781-272-5800

Charles D. Jones Co.
445 Bryant Street, Unit #1
Denver, CO 80204-4800
Phone: 800-777-0910
With branches in CO, MO, KS

Cochrane Supply and Engineering, Inc.
30303 Stephenson Highway
Madison Heights, MI 48071-1633
Phone: 800-482-4894
With branches in MI, OH and KY

Columbus Temperature Control
1053 E. 5th Avenue
Columbus, OH 43201
Phone: 800-837-1837

Controlco
985 3rd Street
Oakland, CA 94607
Phone: 510-636-7900
With branches in CA, NV, TN

Control Depot
9304 G Court
Omaha, NE 68127
Phone: 866-809-7408
With a branch in Lincoln, NE

Control Products
9101 Jameel, Suite 130
Houston, TX 77447
Phone: 713-849-7200
With a branch in San Antonio, TX

Control Stop
1000 N Pine Street, Suite 6
Spartanburg, SC 29303
Phone: (864) 586-3818
With a branch in NC

Engineered Control Systems
5627 NW 74th Avenue
Miami, FL 33166
Phone: 305-885-8804
With branches in FL

G & O Thermal Supply
5435 N. Northwest Highway
Chicago, IL 60630
Phone: 773-763-1300
With branches in IL, IN and WI

Industrial Controls Distributors, LLC (formally Climatic Control)
5061 W. State Street
Milwaukee, WI 53208
Phone: 800-242-1656
With branches in WI

Industrial Controls Distributors, LLC
17 Christopher Way
Eatontown, NJ 07724
Phone: 800-543-8200
With branches in GA, KY, IN, MA, ME, NC, NY, OH, PA, TN

Interstate HVAC Controls
30 Vineland Street
Brighton, MA 02135
Phone: 617-782-9000

Jackson Controls
1708 E. 10th Street
Indianapolis, IN 46201
Phone: 317-231-2200

M & M Controls
9E West Aylesbury Road
Timonium, MD 21093
Phone: 410-252-1221
With branches in VA

MICONTROLS, Inc.
6516 5th Place South
Seattle, WA 98124
Phone: 800-877-8026
With branches in WA, OR

Meier Supply
123 Brown Street
Johnson City, NY 13790
Phone: 607-797-7700
With branches in NY, PA

Minvalco, Inc.
3340 Gorham Avenue
Minneapolis, MN 55426-4267
Phone: 952-920-0131
With branches in MN

Relevant Solutions
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Sugarland, TX 77478
Phone: 281-295-8850

RSD / Refrigeration Supplies Distributor
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Lake Forest, CA 92630
Phone: 949-380-7878
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Saint Louis Boiler Supply, Co.
617 Hanley Industrial Court
St. Louis, MO 63144
Phone: 314-962-9242

South Side Control Supply, Co.
488 N. Milwaukee Avenue
Chicago, IL 60610-3923
Phone: 312-226-4900
With branches in IL, IN

Stromquist and Company
4620 Atlanta Road
Smyrna, GA 30080
Phone: 404-794-3440
With a branch in Orlando, FL

Temperature Control Systems
10315 Brockwood Road
Dallas, TX 75238
Phone: 214-343-1444
With branches in OK, TX

T.F. Campbell Company
1203 Edgebrook Avenue
Pittsburgh, PA 15226
Phone: 412-881-8006

Tower Equipment Co., Inc.
1320 West Broad Street
Stratford, CT 06615
Phone: 800-346-4647

Twinco Supply Corporation
55 Craven Street
Huntington Station, NY 11746-2143
Phone: 800-794-3188
With branches in NY

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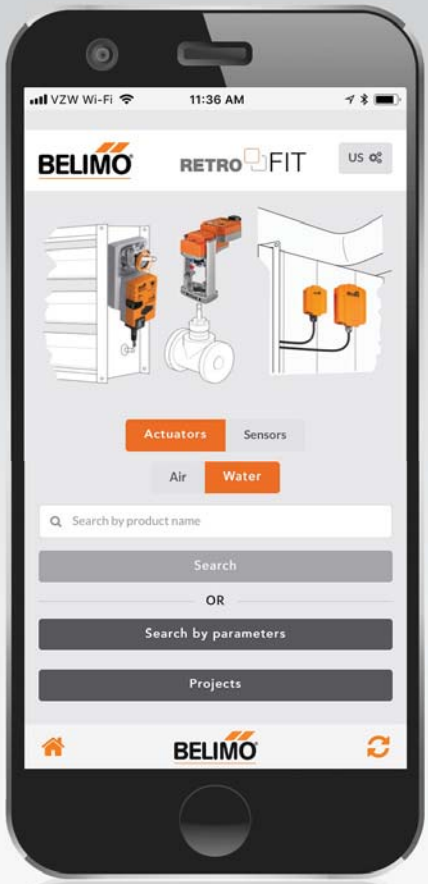

Belimo Retrofit App

Valves and actuators are responsible for ensuring reliable, functioning hydronic and air control HVAC systems all over the world. With innovative technology, verified quality, and easy handling during installations and operation, they boost the performance and efficiency of integrated building technology. The Belimo Retrofit App provides air and water retrofit application solutions with direct coupled or remote access linkages and energy efficient actuators.

Use the Retrofit App on your next renovation project.

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